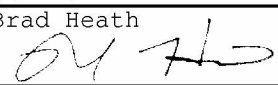


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| EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment | | | | | | Work Assignment Number 2-16 | | | |
| | | | | | | <input type="checkbox"/> Other <input type="checkbox"/> Amendment Number: | | | |
| Contract Number EP-C-16-003 | | | Contract Period 07/01/2016 To 06/30/2021 Base Option Period Number 2 | | | Title of Work Assignment/SF Site Name Tech Support for NPDES & PQRs | | | |
| Contractor EASTERN RESEARCH GROUP, INC. | | | | Specify Section and paragraph of Contract SOW See PWS | | | | | |
| Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval | | | | | | Period of Performance From 07/01/2018 To 06/30/2019 | | | |
| Comments: The contractor shall not commence work on this work assignment until 7/1/2018. | | | | | | | | | |
| <div style="display: flex; justify-content: space-between;"> <input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund </div> | | | | | | | | | |
| Note: To report additional accounting and appropriations data use EPA Form 1900-69A. | | | | | | | | | |
| SFO <input type="checkbox"/> (Max 2) | | | | | | | | | |
| Line | DCN (Max 6) | Budget/FY (Max 4) | Appropriation Code (Max 6) | Budget Org/Code (Max 7) | Program Element (Max 9) | Object Class (Max 4) | Amount (Dollars) (Cents) | Site/Project (Max 8) | Cost Org/Code |
| 1 | | | | | | | | | |
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| Authorized Work Assignment Ceiling | | | | | | | | | |
| Contract Period: | | Cost/Fee: | | LOE: | | | | | |
| 07/01/2016 To 06/30/2021 | | | | | | | | | |
| This Action: | | | | | | | | | |
| Total: | | | | | | | | | |
| Work Plan / Cost Estimate Approvals | | | | | | | | | |
| Contractor WP Dated: | | | | Cost/Fee | | LOE: | | | |
| Cumulative Approved: | | | | Cost/Fee | | LOE: | | | |
| Work Assignment Manager Name Janita Aguirre | | | | | | Branch/Mail Code: | | | |
| <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div> | | | | | | Phone Number: 202-566-1149 | | | |
| | | | | | | FAX Number: | | | |
| Project Officer Name Robin Danesi | | | | | | Branch/Mail Code: | | | |
| <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div> | | | | | | Phone Number: 202-564-1846 | | | |
| | | | | | | FAX Number: | | | |
| Other Agency Official Name | | | | | | Branch/Mail Code: | | | |
| <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div> | | | | | | Phone Number: | | | |
| | | | | | | FAX Number: | | | |
| Contracting Official Name Brad Heath | | | | | | Branch/Mail Code: | | | |
| <div style="display: flex; justify-content: space-between;"> <div>  (Signature) </div> <div>6/30/2018 (Date)</div> </div> | | | | | | Phone Number: 513-487-2352 | | | |
| | | | | | | FAX Number: | | | |

**PERFORMANCE WORK STATEMENT
CONTRACT EP-C-16-003
WORK ASSIGNMENT 2-16**

Title: Technical Support for NPDES Program and Permit Quality Reviews

Work Assignment Contracting Officer's Representative (WACOR):

| | | |
|--|---|---|
| Janita Aguirre Phone: (202) 566-1149 Fax (202) 564-9544 aguirre.janita@epa.gov | <u>USPS Mailing Address</u> Water Permits Division 1200 Pennsylvania Ave., NW Mail Code 4203M Washington, DC 20460 | <u>Courier Address</u> EPA East Building 1201 Constitution Ave., NW Room 7135D½ Washington, DC 20004 |
|--|---|---|

Alternate Work Assignment Contracting Officer's Representative (AWACOR):

| | | |
|--|---|---|
| David Hair Phone: (202) 564-2287 Fax (202) 564-9544 hair.david@epa.gov | <u>USPS Mailing Address</u> Water Permits Division 1200 Pennsylvania Ave., NW Mail Code 4203M Washington, DC 20460 | <u>Courier Address</u> EPA East Building 1201 Constitution Ave., NW Room 7126 Washington, DC 20004 |
|--|---|---|

Period of Performance: July 1, 2018 through June 30, 2019

Level of Effort: EPA estimates 864 hours will be required to support the activities outlined below.

Background: An important component of a healthy National Pollutant Discharge Elimination System (NPDES) program is permit quality. Program and Permit Quality Reviews (PQRs) allow permitting authorities (during both issuance and oversight processes) to obtain information about the functioning of various aspects of the program and its potential to maintain and improve water quality.

This is particularly important as EPA works to achieve the goals of ensuring waters support designated uses or improving water segments and protecting streams from becoming impaired (maintaining uses). Permits that are written to meet these goals are critical in combination with other Clean Water Act water quality programs in achieving these objectives.

The NPDES program has used a variety of tools over the course of the last three decades to enhance program and permit quality. These methods have included reviews of draft permits using standard checklists, and PQRs. Reviews can be used to enhance specific programs or determine where additional guidance is needed. Most importantly, program and permit quality reviews can be used to improve the integrity of the program and will help EPA improve our ability to measure the success of the program.

Through this review mechanism, EPA promotes national consistency, identifies successes in

implementation of the base NPDES program, as well as opportunities for improvement in the development of NPDES permits. The findings of the reviews may be used to identify areas for training or guidance and to identify or assist states in determining any needed action items to improve their NPDES programs.

Under this work assignment, EPA seeks support in updating draft methodology to allow EPA regions to manage the reviews, and assistance with conducting reviews of state programs and drafting reports outlining the results of the reviews. This scope of work includes implementation of permit quality reviews and results management.

Scope of Work:

This work assignment provides support to the Water Permits Division (WPD) to implement permitting oversight through a quality review process, as well as finalizing tools to ensure continual improvement of the NPDES permitting program. The Contractor shall provide technical support to EPA for the tasks described below. Support under the work assignment may require the Contractor to perform on a rapid response, quick turn-around basis.

Task 0: Kickoff Meeting

A kickoff meeting will be held to review the work statement and clarify the work to be performed. The contractor's work assignment manager and appropriate EPA staff and WACOR should attend. This meeting will be held by teleconference and may occur before the work plan is submitted to EPA.

Task 0 Deliverables: There are no deliverables associated with this task.

Task 1: Technical and Administrative Support for Implementing PQRs

The contractor shall support the implementation of:

- Up to seven (7) Region-led PQRs during the period of performance, some of which may have been partially conducted during the prior option period;
- One (1) headquarters-led PQR of Region-issued permits for facilities on tribal lands and U.S. territories;
- Final formatting and copy review of up to five (5) reports completed by EPA regional offices.

Implementation of these reviews include planning and coordination with EPA headquarters and EPA regional staff, and review of permits in accordance with existing SOPs, consisting of both a comprehensive program review and topic specific reviews. Task 1 should be supported by staff with at least 10 years of experience writing and/or reviewing NPDES permits; alternate experience may be substituted at the discretion of the EPA work assignment manager.

The tentative schedule for upcoming Region-led PQRs is as follows:

| PQR No. | PQR Topic/Type | Schedule (tentative) |
|----------------|---------------------------------------|-----------------------------|
| #1 | Regional PQR (Region 5): Illinois | Spring 2018 |
| #2 | Regional PQR (Region 3): Delaware | Spring 2018 |
| #3 | Regional PQR (Region 8): South Dakota | Summer 2018 |
| #4 | Regional PQR: TBD | TBD |
| #5 | Regional PQR: TBD | TBD |
| #6 | Regional PQR: TBD | TBD |
| #7 | Regional PQR: TBD | TBD |

The contractor shall support EPA in implementing these reviews. This shall include the collection of permits and fact sheets from permitting authorities identified by regional staff, regulations, and policies, as appropriate. PQRs are conducted using the Standard Operating Procedures and tools currently posted on EPA's NPDES website:

<https://www.epa.gov/npdes/npdes-permit-quality-review-standard-operating-procedures>

The contractor shall support WPD in conducting site visits for up to seven Region-led reviews. Each PQR will consist of approximately 10 permits from the states listed above. The details of the number of site visits and permits reviewed may be adjusted by the WACOR based on the unique characteristics of each state and region. Typically, contractor staff review no more than six permits per state.

The contractor shall review materials prior to any site visits, discuss preliminary review findings with EPA, and participate in site visits to regional and state offices. Site visits involve reviewing permit files and administrative records for core review permits, assisting EPA in interviewing permit writers and understanding the complete permit writing process within the State.

The headquarters-led review will require no travel or site visits. Desktop reviews of permits, fact sheets, and applications will be used for this review. In addition, some background research, primarily phone interviews and email communications with personnel in EPA's regional offices, will be required in order to obtain sufficient information to draft the background and process portions of the report.

The contractor shall develop a draft report providing a comprehensive summary of findings and recommendations from the core reviews following the site visits, including draft recommendations for improving quality of permits within specific regions and/or permitting authorities, using the report template developed by EPA (available with the SOP documents referenced above). Examples of complete reports can be found online at <https://www.epa.gov/npdes/regional-and-state-npdes-pqr-reports>. For reviews supported by the contractor, the contractor typically drafts the background sections and the Core Review Findings section, and the appropriately associated portions of the Action Items section. For headquarters-led PQRs, EPA may request additional permit reviews and drafting of report language for other sections of the report such as the national topic areas. On rare occasions, EPA may request the contractor perform similar additional reviews and develop report language for Region-led reviews.

The contractor shall edit and finalize reports after they have undergone reviews by EPA headquarters, regions and states. This includes assisting EPA in finalizing reports for regions previously conducted in addition to developing and finalizing reports for the upcoming reviews. This may include assistance with formatting drafts and using the Word template.

Task 1 Deliverables: The contractor shall provide draft reports 30 days after PQR site visit is completed. EPA will review draft reports and provide comments back to contractor within 30 days of receipt of draft report. The contractor shall provide the final draft report within 7 business days after receipt of EPA comments.

Task 2: Develop PQR Tools

The contractor shall assist in the development and/or updating of tools to support the FY18-22 PQR cycle. This may include formatting draft documents or editing existing documents to reflect process changes that will be implemented in the new cycle. This includes drafting new tools to assess national topic areas that are not part of the previous PQR cycle.

Task 2 should be supported by staff experienced in both writing and/or reviewing NPDES permits and developing standard evaluation tools. Additional support will be needed from staff with experience creating and formatting documents such as checklists, standard operating procedure manuals, and report templates in both Word and PDF formats. Ideally, one staff member supporting this task should have direct experience using existing PQR tools.

Task 2 Deliverables: The contractor shall provide draft tools/summaries within 10 business days after EPA WAM request for draft PQR tools through written technical directives. EPA will review draft documents and provide comments back to contractor within 30 days of receipt of draft documents. Final tools/summaries are due 7 business days from receipt of EPA comments. Final documents should be provided in both Word and PDF formats. Final PQR tools that will be posted online must be compliant with Section 508 of the Rehabilitation Act of 1973 (as amended) (29 USC § 794d).

Task 3: Regional Assistance

The contractor shall assist in the review of state materials, such as standard conditions and templates, as needed by EPA regions in conducting PQRs as outlined in Task 1, to ensure compliance with the Clean Water Act and appropriate NPDES regulations at 40 CFR part 122. Comments will be due 14 days from receipt of documents from EPA.

OTHER REQUIREMENTS

Quality Assurance Statement

A quality assurance project plan (QAPP) is not required for Tasks 1-3 of this project because they do not involve the generation, management, distribution, or use of primary environmental data that will be used or have the potential for use in environmental decision making.

Reporting and Deliverables

Progress Reports shall be submitted in accordance with the reporting requirements of the

contract. In addition, the contractor shall maintain contact with the WACOR to advise the WACOR of progress and problems. All documents shall be delivered in Word, Excel, HTML, and/or PDF format, as requested by the WACOR. The contractor shall notify the EPA immediately when expenditures of 75% and 90% of the work assignment LOE or funding (including pipeline costs) are reached.

Travel

This work assignment requires domestic travel to regional and/or state offices under this scope of work to support information collection activities. For purposes of costing, assume one person, for a duration of 3 days and 2 nights, for each of the reviews, and assume travel is to state capitals for region-led reviews. Additional local travel may be expected under this work assignment. All travel other than local travel shall be approved in advance by the project officer and shall be in accordance with the contract.

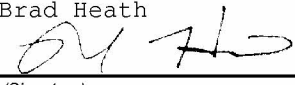
Conference/Meeting Guidelines and Limitations

The contractor shall immediately alert the WACOR to any anticipated event under the work assignment which may result in incurring an estimated \$20,000 or more cost, funded by EPA, specific to that event, meeting, training, etc. Those costs would include travel of both prime and consultant personnel, planning and facilitation costs, AV and rental of venue costs, etc. The WACOR will then prepare approval internal paperwork for the event and will advise the contractor when appropriate signatures have been obtained. At that point, effort can proceed for the event. If the event is being sponsored by another EPA organization, the organization providing the planning is responsible for the approval.

QUALITY ASSURANCE SURVEILLANCE PLAN

The following performance measures will apply to work under this work assignment

| Performance Requirement | Measurable Performance Standards | Surveillance Methods | Incentives/Disincentives |
|--|---|--|---|
| Management and Communications: During the performance of this work assignment, the Contractor shall immediately inform EPA of any issue that may potentially impact project schedules. | <p>The Contractor shall maintain contact with the CL-COR and Work Assignment Contracting Officer's Representative throughout the performance of the contract and identify any issues or concerns to the appropriate EPA person prior to occurrence. In cases where issues have a direct impact on project schedules and cost, the contractor shall provide options for EPA's consideration on resolving or mitigating the impacts.</p> | <p>The CL-COR and Work Assignment Contracting Officer's Representative will allocate the time needed to discuss and address all issues identified by the Contractor. They will document and maintain a complete record of the issues, agreements and outcome. They will review monthly progress reports for indicators of communications problems and will bring issues to the Contractor's immediate attention.</p> | <p>Any issues that impact project schedules that are not brought to the attention of the appropriate CL-COR or Work Assignment Contracting Officer's Representative before occurrence will be unsatisfactory. Two or more incidents during this work assignment option period will be reported as unsatisfactory performance in the CPARS Evaluation System.</p> |
| Cost Management and Control: The Contractor shall perform all work in an efficient and cost effective manner, applying cost control measures where practical. The Contractor shall immediately inform EPA of any issue that may potentially impact project costs. | <p>The Contractor shall monitor, track and accurately report level of effort, labor cost, other direct cost and fee expenditures to EPA through monthly progress reports and approved special reporting requirements.</p> <p>The Contractor shall assign appropriately leveled and skilled personnel to all tasks, practice and encourage time management, and ensure accurate and appropriate time keeping.</p> | <p>The CL-COR will routinely meet with the Contractor's Project Manager to discuss the work progress, contract and individual work assignment level expenditures. The Project Officer shall review the Contractor's monthly progress reports and request the WACOR's verification of expenditures and technical progress before authorizing invoice payments.</p> <p>The WACOR will maintain regular contact with the Contractor's designated work assignment manager /project manager to discuss work assignment progress and expenditure. The WACOR will review the Contractor's monthly progress report and invoice and provide feedback to the Project Officer on payment.</p> | <p>Any issues that impact project costs should be brought to the attention of the CL-COR and Work Assignment Contracting Officer's Representative. An overrun that exceeds 4% of the total obligation that is the direct result of the Contractor's failure to manage and control cost will result in an unsatisfactory rating being reported to the CPARS Evaluation System.</p> |
| Technical Analyses: The Contractor shall collect and analyze data in support of the Agency decision-making. The Contractor shall immediately inform EPA of any issue that may potentially impact the project. | <p>The analyses conducted by the contractor shall be factual and defensible and based on sound science and engineering. All data shall be collected from reputable sources and quality assurance measures shall be conducted in accordance with agency requirements and any additional requirements outlined in individual work assignments. Any work requiring the contractor provided options or recommendations shall include the rationale use in selecting the option/recommendation and all other options considered.</p> | <p>The appropriate CL-COR and Work Assignment Contracting Officer's Representative will review all analyses conducted by the Contractor and will independently consider the merit. EPA may opt to peer review analyses to further validate merit.</p> | <p>All analyses conducted for EPA by the Contractor must be factual and based on sound science and engineering. If after reviewing the Contractor's analysis, EPA determines that the content is not factual, legally defensible or based on sound science and engineering, The Contractor's performance will be reported as unsatisfactory in the CPARS Evaluation System.</p> |

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| EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment | | | | | | Work Assignment Number 2-17 | | | |
| | | | | | | <input type="checkbox"/> Other <input type="checkbox"/> Amendment Number: | | | |
| Contract Number EP-C-16-003 | | | Contract Period 07/01/2016 To 06/30/2021 Base Option Period Number 2 | | | Title of Work Assignment/SF Site Name Animal Ag, Aquaculture | | | |
| Contractor EASTERN RESEARCH GROUP, INC. | | | | Specify Section and paragraph of Contract SOW See PWS | | | | | |
| Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval | | | | | | Period of Performance From 07/01/2018 To 06/30/2019 | | | |
| Comments: The contractor shall not commence work on this work assignment until 7/1/2018. | | | | | | | | | |
| <div style="display: flex; justify-content: space-between;"> <input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund </div> | | | | | | | | | |
| SFO <input type="checkbox"/> (Max 2) Note: To report additional accounting and appropriations date use EPA Form 1900-69A. | | | | | | | | | |
| Line | DCN (Max 6) | Budget/FY (Max 4) | Appropriation Code (Max 6) | Budget Org/Code (Max 7) | Program Element (Max 9) | Object Class (Max 4) | Amount (Dollars) (Cents) | Site/Project (Max 8) | Cost Org/Code |
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| Authorized Work Assignment Ceiling | | | | | | | | | |
| Contract Period: | | Cost/Fee: | | | LOE: | | | | |
| 07/01/2016 To 06/30/2021 | | | | | | | | | |
| This Action: | | | | | | | | | |
| Total: | | | | | | | | | |
| Work Plan / Cost Estimate Approvals | | | | | | | | | |
| Contractor WP Dated: | | | | | Cost/Fee | | LOE: | | |
| Cumulative Approved: | | | | | Cost/Fee | | LOE: | | |
| Work Assignment Manager Name Jennifer Molloy | | | | | | | Branch/Mail Code: | | |
| <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div> | | | | | | | Phone Number: 202-564-1939 | | |
| | | | | | | | FAX Number: | | |
| Project Officer Name Robin Danesi | | | | | | | Branch/Mail Code: | | |
| <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div> | | | | | | | Phone Number: 202-564-1846 | | |
| | | | | | | | FAX Number: | | |
| Other Agency Official Name | | | | | | | Branch/Mail Code: | | |
| <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div> | | | | | | | Phone Number: | | |
| | | | | | | | FAX Number: | | |
| Contracting Official Name Brad Heath | | | | | | | Branch/Mail Code: | | |
| <div style="display: flex; justify-content: space-between;"> <div>  (Signature) </div> <div>6/30/2018 (Date)</div> </div> | | | | | | | Phone Number: 513-487-2352 | | |
| | | | | | | | FAX Number: | | |

**PERFORMANCE WORK STATEMENT
CONTRACT EP-C-16-003
WORK ASSIGNMENT 2-17**

Title: Technical Support for the Implementation of projects in NPDES areas of Animal Agriculture, Aquaculture, Resilience Tools, and Program Messaging (short title: NPDES Animal Ag, Aquaculture, Resilience & Messaging)

| Work Assignment Contracting Officer's Representative | Alternative Work Assignment Contracting Officer's Representative | Alternative Work Assignment Contracting Officer's Representative |
|--|---|---|
| Jennifer Molloy (4203M) Water Permits Division Office of Wastewater Management U.S. Environmental Protection Agency Washington, D.C. 20460 (202)-564-1939 | Hema Subramanian (4203M) Water Permits Division Office of Wastewater Management U.S. Environmental Protection Agency Washington, D.C. 20460 (202)-564-5041 | Jackie Clark (4203M) Water Permits Division Office of Wastewater Management U.S. Environmental Protection Agency Washington, D.C. 20460 (202)-564-6582 |

Period of Performance: July 1, 2018 through June 30, 2019

Estimated Level of Effort: 1615 hours

Background Information: This work assignment covers four separate NPDES program areas plus administrative tasks.

Part I. Administration. This includes project management tasks. (Task 1)

Part II. Animal Agriculture. The NPDES Concentrated Animal Feeding Operation (CAFO) program currently implements measures to prevent and abate pollutant discharges from animal agriculture activities. EPA continues to refine an integrated animal agricultural strategy to improve the environmental performance of animal agriculture through both regulatory and non-regulatory initiatives. The strategy includes supporting State and EPA permitting programs, exploring solid science and technology-based options for more effective management of manure and other AFO pollutants, and harnessing partnerships to improve awareness and encourage voluntary adoption of more effective water quality measures. (Tasks 2-6)

Part III. Aquaculture. Within the general area of aquaculture, the NPDES program issues permits for a variety of systems that culture or husband marine and freshwater animals, and occasionally plants. These can include fish hatcheries, raceways, ponds or recirculating systems, floating or submersible net pans or cages and bag, rack or suspended shellfish culture, when these systems are or result in point source discharges of pollutants to water of the U.S.

Operations that produce 100,000 pounds annually of fish or shellfish are subject to the concentrated aquatic animal production (CAAP) effluent guidelines, but many smaller aquatic animal production facilities (AAPFs) that are point source discharges of pollutants to waters of the U.S. are also subject to NPDES permitting. (Tasks 7-8)

Part IV. Adaptation and Resilience Tools. The National Water Program strategy to develop adaptation and resilience tools for the NPDES program, originally drafted in 2014 and updated periodically, is a multi-faceted approach to ensure that the NPDES program has permit-related tools, data and other information for permit writers and permittees to address challenges associated with changes in precipitation and run-off, higher and lower base flows, drought, rising sea levels, storm surges, ambient water temperature and other related factors. (Task 9-10)

Part V. NPDES Messaging. The NPDES Messaging effort is compiling information to characterize the purpose and accomplishment of the program over 40 years, with emphasis on national successes in pollutant reduction as well as state and regional successes. (Task 11)

Scope of Work:

The administrative and technical tasks provided by the contractor under this work assignment shall support EPA's implementation of all areas noted above. The contractor will not be involved in Agency policy- or decision-making. More specific details concerning the tasks outlined below shall be provided to the contractor through written technical directives from the WACOR in accordance with the technical direction clause of the contract. Based on evolving program priorities, LOE among tasks in this work assignment may be reallocated during the Option Period, in consultation with the contractor.

PART I. ADMINISTRATION

Task 1. Project Management

The contractor shall provide the necessary oversight, management and cost controls to implement the tasks in this work assignment, including the development of monthly invoices with the necessary break-downs to track costs per task. The contractor shall have calls approximately bi-monthly with the WACOR in order to discuss ongoing and planned work, or as needed. The contractor shall update the QAPP developed in Option Period 0, WA 0-17 to incorporate new and revised tasks.

Deliverables and Schedule: Regular and ongoing communication. Monthly invoices. Updated QAPP. Other possible administrative tasks as outlined in the contract and those mutually agreed upon by WACOR and contractor.

PART II. ANIMAL AGRICULTURE

Task 2. Supporting State, Tribal and Regional Initiatives to Support Water Quality Initiatives Associated with Agricultural Operations

EPA seeks to provide support to State, Tribal and Regional CAFO programs in the form of contractor assistance to develop or supplement specific elements of the program to improve manure management or other initiatives associated with agricultural operations. The State, Tribal or Regional program can propose an array of projects as long as there is reasonable demonstration of sustainable environmental improvement. Projects may be improvements to the regulatory program; supplements to the regulatory program; or actions that will target improved management at facilities without permit coverage. Examples of potential projects include, but are not limited to: training technical service providers to develop NMPs; developing manure transfer programs; or developing robust technical standards. With fewer and fewer CAFOs obtaining NPDES permit coverage, projects that will provide water quality improvements for discharges at all types of operations are desirable. Examples of contractor assistance include, but are not restricted to: drafting permit, rule, code or guidance language; conducting data analyses or modeling; organizing and/or providing training on developing NMPs; conducting livestock operation inspections, water quality or soil sampling or other field investigations; setting up databases; compiling information; conducting engineering reviews of agricultural practices; or other task directly related to improving water quality-related activities at agricultural operations. LOE will vary depending on the types of service needed. The following are projects in process or adequately scoped out at the time this work assignment is being written. Other projects that fall within this scope of work may be initiated under this task during this Option Period.

Project 1. Confederated Tribe and Bands of the Yakama Nation with Region 10: Under prior work assignments, EPA worked with the Yakama Tribe to develop nutrient management program language that can be incorporated into Tribal Codes, as well as accessory information, including a draft implementation strategy. To continue this effort, the contractor will assist the Tribe and its advisors to refine and execute the implementation plan for the Tribe's Nutrient Management Program, including possible activities such as working with BLM, to incorporate nutrient management provisions into lease agreements; developing monitoring/verification mechanisms; providing some training/education for the Yakama Tribe to use in implementing the Nutrient Management Program.

Deliverables and Schedule: As this work is already in process, the contractor will continue to provide support to the Tribe as the Council works to codify the draft language, and refine and initiate implementation. The work shall proceed in consultation with the Tribe, Region 10 and the WACOR, and products and schedules may be adjusted as needed.

Project 2. Vermont DEC with Region 1: Phosphorus TMDL wasteload allocations for Lake Champlain have implications for dairy operations in the watershed, particularly in Vermont where required best management practices are required for all livestock operations. Dairy producers in Vermont are considering converting from confined to pasture-based operations. To support this decision-making, a consortium of partners is undertaking assessments of water quality, social and economic indicators. In consultation with the partners, the contractor will support the compilation and analysis (i.e., through modeling and/or other methods) of water quality-based indicators, i.e., implications for nutrient and/or pathogen delivery to surface

waters, with cattle on pasture versus in confined operations. Under this series of tasks, the contractor will quantify the economic costs and time frames needed to transition small dairy farms in Vermont from animal confinement to an economically viable pasture-based operation.

Task A: Prepare Methodology to conduct a compilation of existing economic information. Compile existing economic information for Vermont and relevant regional areas regarding the cost and financial impact of switching from confinement to pasture rotational grazing. Data collection will be prioritized as follows: Vermont, other Northeastern U.S. states, Midwestern states, and finally any states outside of the regions.

Deliverables and Schedule: This worked commenced and should have been completed under WA 1-17. If not already finalized by the beginning of this Option Period, the contractor shall submit the final methodology that addresses EPA's and partner comments on the draft methodology.

Task B: Compile and analyze available information to better understand the economic cost of lost production to a small size farm in the Lake Champlain area undergoing transition, anticipated long-term economic benefits and at what point in transition the economic shift occurs.

Task B.1 – Analyze available information compiled through Task A and conduct necessary statistical analyses. The data should be analyzed to provide information related to the following research questions:

- What data exist for VT farmers/farms in the Lake Champlain basin and statewide
 - Demographic (age, education, years farming, etc.)
 - physical (total size and acres in production)
 - cadastral (tax, value, etc.)
 - farm specific (heads of cows, crops grown, equipment, cropping system, fertilization and manure application rates, conservation practices?)
 - financial (farm sales, debt, history of conservation grants)
- What economic data exist for small dairy farms both nationally and in Vermont that have transitioned from an animal confinement system to a pastureland rotational grazing system
 - cadastral (tax, value, etc.)
 - financial (farm sales, debt, history of conservation grants)
 - timeframe and economic cost of lost production to a small size farm in Lake Champlain undergoing transition,
 - anticipated long-term economic benefits from undergoing the transition,
 - at what point in transition the economic shift occurs.
 - Transferability of studies elsewhere in the United states and analyze their value for answering economic questions specific to Vermont small dairy farms.

Task B.2 – If still considered by the work group to be the appropriate next step, compile and analyze survey data available from Jennifer Colby's (UVM Pasture Program Coordinator) 2011 Master's Thesis, and from a planned follow-up grass-based farm survey by the UVM Center for Sustainable Agriculture. Ms. Colby carried out a survey of

grass-based farmers in 2011 as part of her Master thesis. UVM Center for Sustainable Agriculture plans to undertake a follow-up survey of grass-based farms in late 2017/early 2018 to better understand the status of farms (including dairy farms) using managed rotational grazing systems. Information from both surveys (assuming the follow up survey is complete) will be provided to the Contractor for analysis. The data should be analyzed to provide information related to the following research questions:

- How do grass-based farms contribute to natural resource health?
- What are the financial ramifications of transition from confinement to pasture?
- What factors influence farm success?
- What factors influence farmer quality of life?
- What is the public value gained from an increase in grass-based farms?

Task B.3 – Assess data gaps. The contractor shall identify additional information necessary to better understand the economic cost of lost production to a small size farm in Lake Champlain undergoing transition, anticipated long-term economic benefits and at what point in transition the economic shift occurs.

Deliverables and Schedule: These tasks were planned to be initiated under WA 1-17. The contractor shall continue per the schedules in place at the beginning of the Option Period to complete tasks under B, per the methodology developed under A. Tasks under B may be modified per technical direction from the WACOR, as determined in consultation with the project partners. The contractor shall participate in periodic conference calls with the project partners to update them on progress.

Subsequent tasks have been outlined in a separate document, which has been provided to the contractor. Should resources allow, those tasks would be incorporated by reference into this work assignment. However, for purposes of work plan development the contractor shall only include estimates for the tasks outlined above.

Project 3. Shoshone Bannock Tribe with Region 10. This project will use the base information on tribal nutrient codes developed for the Yakama Tribe (Project 1) and adapt it for the Shoshone Bannock Tribe. Outcomes are similar, i.e., using Tribal Codes to improve nutrient management, though conditions and scenarios differ. To the extent possible, in order to maximize resources, work will be aligned with efforts under Projects 4 and 5 since outcomes and time lines are similar.

Deliverables and Schedule: This project was initiated under WA 1-17. Under this work assignment, draft code language and implementation measures will be developed, per specific input from the Tribe. The work shall proceed in consultation with the Tribe, Region 10 and the WACOR, and products and schedules may be adjusted as needed.

Project 4. Couer d’Alene Tribe with Region 10. This project will use the base information on tribal nutrient codes developed for the Yakama Tribe (Project 1) and adapt it for the Couer d’Alene Tribe. Outcomes are similar, i.e., using Tribal Codes to improve nutrient management, though conditions and scenarios differ. To the extent possible, in order to

maximize resources, work will be aligned with efforts under Projects 3 and 5 since outcomes and time lines are similar.

Deliverables and Schedule: The WACOR and Region 10 shall convene a kick-off meeting with the contractor, Tribal and EPA project partners to discuss issues specific to the Couer d'Alene tribal lands, specific objectives, priorities and approximate time frames for the project. Within 2 weeks of the kick-off meeting, the contractor will provide a draft outline and schedule for the work per that input. The work shall proceed in consultation with the Tribe, Region 10 and the WACOR, and products and schedules may be adjusted as needed.

Project 5. Nez Perce Tribe with Region 10. This project will use the base information on tribal nutrient codes developed for the Yakama Tribe (Project 1) and adapt it for the Nez Perce Tribe. Outcomes are similar, i.e., using Tribal Codes to improve nutrient management, though conditions and scenarios differ. To the extent possible, in order to maximize resources, work will be aligned with efforts under Projects 3 and 4 since outcomes and time lines are similar.

Deliverables and Schedule: The WACOR and Region 10 shall convene a kick-off meeting with the contractor, Tribal and EPA project partners to discuss issues specific to the Nez Perce tribal lands, specific objectives, priorities and approximate time frames for the project. Within 2 weeks of the kick-off meeting, the contractor will provide a draft outline and schedule for the work per that input. The work shall proceed in consultation with the Tribe, Region 10 and the WACOR, and products and schedules may be adjusted as needed.

Project 6. Oklahoma Department of Agriculture, Food and Forestry with Region 6. ODAFF received numerous NOIs under the 2017 Construction General Permit (CGP: OKR10F000) for dry litter poultry operations. ODAFF would like to develop an information flyer specific to their Licensing Program that explains CGP requirements for agriculture-related operations. The contractor will work with ODAFF and Region 6 CAFO and stormwater programs to ensure accuracy of the content of the flyer. The product will likely be a 1-page, possibly tri-fold design, flyer, but may be adapted to another format as the project evolves.

Deliverables and Schedule: This effort commenced, and may have been completed, under WA 1-17. If the product was not completed under WA 1-17, then the contractor shall finalize it per the schedule in place at the beginning of this Option Period. The final product shall be provided electronically, in whatever program format it has been developed, as well as in pdf format. The final product may be in color, with appropriate illustrative graphics. EPA does not expect printing expenses to be incurred under this task.

Project 7. New Mexico Environment Department with Region 6. NMED, though not authorized to administer the NPDES program, implements state programs to protect both surface waters and groundwater from animal feeding operations. The State would like to develop training materials, and possibly sessions, for state program staff on nutrient management planning and implementation. The training will likely include elements of nutrient management planning, including required elements of plans, what to look for when

reviewing a plan, and what to assess during inspections or site visits. In the interest of optimizing costs, the contractor, in consultation with the WACOR, Region and NMED should consider delivery of some materials and sessions electronically. However, EPA will consider in-person training, should it be determined to be a cost-effective way to deliver some elements of the training program. For the duration of this project, the contractor shall also consider how elements of this training program may be transferred or applied in other States and Regions.

Deliverables and Schedule: This effort was initiated under WA 1-17. The contractor will continue to work with NMED and EPA to implement the curriculum and schedule developed during the prior Option Period.

Task 3. Supporting Development of NPDES CAFO Permits issued by EPA

Preventing and eliminating EPA permit backlogs is a high priority for EPA. Though there are few EPA backlogged CAFO permits at this time, there may be elements of certain reissuance processes where contractor assistance would expedite finalization of a permit, including drafting of certain permit or fact sheet provisions, undertaking certain analyses such as biological evaluations for ESA consultation, developing record-keeping and reporting forms, or assisting with logistical aspects of response to comments. Tasks will be permit-specific, and will be identified as EPA Regions identify permits for which they could use assistance.

Deliverables and Schedule: As/if permits are identified, the WACOR will set up kick-off call(s) with the relevant Regional permitting staff. Specific tasks will be identified at that time. For purposes of work plan development, assume approximately 20 hours.

Task 4. Supporting Region 5 in Ohio Authorization Process

The state of Ohio is currently going through the formal authorization process of having the NPDES CAFO program and stormwater from agricultural operations transition from Ohio EPA to Ohio Department of Agriculture (ODA). This includes numerous reviews and cross-walks to assess ODA rules and program for conformance with the federal rules. It will also require public notice and comment, as well as the likelihood of public hearings. The contractor shall provide support to EPA Region 5 for certain aspects of this process, such as assessing ODA rules and program description for conformance with the e-reporting rule, compilation of public comments, drafting responses to comments, logistical support for public hearings, and other tasks associated with any U.S. EPA action on Ohio's request to transfer. The contractor will not be undertaking inherent government functions, e.g., determining whether or not Ohio regulations meet the federal requirements, but will provide support to EPA's determinations. The contractor will not be involved in all elements of the review, but will provide support as EPA determines that there is a need.

Deliverables and Schedule: When Region 5 indicates that there are specific tasks in need of contractor assistance, the WACOR will schedule a 3-way call with the contractor and Region 5 to discuss schedule and specific deliverables. Deliverables may evolve as the authorization process moves forward. The contractor will be expected to be responsive to quick turn-arounds

as well as longer term objectives. For purposes of work plan development, assume approximately 20 hours.

Task 5. Providing Support for Animal Ag Partnership Projects and Events

Under this task the contractor will provide logistical support for The Animal Ag Discussion Group and other ag partnerships. AADG is an informal group of animal agriculture stakeholders including representatives from the U.S. Department of Agriculture (USDA), all sectors of the animal feeding industry and their associations, academia, and states. The group convenes via meetings and calls, as well as on farms and at agricultural events around the country, to keep lines of communication open and develop a shared understanding of how to achieve viable agriculture and clean water. <https://www.epa.gov/npdes/animal-feeding-operations-afos-animal-agriculture-industry-partnerships>

The contractor will support efforts to organize the Fall 2018 AADG meeting (likely begun under WA 1-17). The contractor may also assist EPA Regional Coordinators in convening Regional partnership forums, as web-based or small in-person meetings. The contractor may: provide support for written materials such as meeting agendas or summaries, organize meeting venues or web conferencing; and other related tasks as communicated through technical direction by the WACOR. Should specific projects be identified by the group, the contractor may support certain aspects of developing or implementing tasks associated with those projects. Other ag partners and partnerships that may fall under this task include ACWA, States and Tribes, nutrient technology partners, and ag industry groups.

Deliverables and Schedule: Deliverables and schedules will be specified with technical direction and schedules developed with the contractor on a case-by-case basis. For purposes of work plan development, assume approximately 60 hours.

Task 6. Supporting Technology and Innovation Collaborative Activities

EPA collaborates with a range of agricultural stakeholders, including USDA, producers, integrators, industry trade associations, and environmental organizations, to identify and support innovative technologies and practices that can promote:

- Water quality and other environmental benefits
- Productive agriculture
- Enhanced manure management
- Beneficial recycling and reuse of manure
- Cost savings for producers

One example of such collaborative work is the Nutrient Recycling Challenge, which EPA launched in 2015 to accelerate development and use of technologies that can recover nitrogen and phosphorus from animal manure and generate value-added products. To build on the successes of the Challenge, EPA will continue to collaborate with technology developers and agricultural stakeholders to support development of new technologies and practices. Support may

include activities and events focused around technology evaluation, technology demonstrations, connecting technology developers to end-users, identifying funding sources, and general education and outreach.

Deliverables and Schedule: This task was established in WA 1-17. If efforts commenced under that work assignment, then the contractor shall continue those efforts as previously agreed upon with the WACOR. If work did not commence under WA 1-17, then efforts under this work assignment shall commence when the WACOR convenes kick-off call. For purposes of work plan development assume approximately 60 hours.

PART III. AQUACULTURE

Task 7. Characterizing Shellfish Production Systems

Historically, in-situ production systems of shellfish such as oysters and clams did not add food, nutrients, pesticides, pharmaceuticals or other materials that would result in the introduction of pollutants to waters of the U.S., and thus were not required to have NPDES permit coverage. However, in more recent years, some shellfish operations have begun utilizing pesticides or other substances, which can result in discharges of unutilized substances or residues that are considered pollutants. EPA has a poor understanding of how frequently, and under what circumstances, this is happening. Under this task the contractor will undertake an evaluation of shellfish production systems in U.S. waters to characterize the types of introduced materials/substances used in shellfish production, how wide-spread these practices may be, and any documented water quality effects.

Deliverables and Schedule: Work on this task was initiated (and may have been completed) under WA 1-17. If work was not completed under WA 1-17, then efforts shall continue per the outline and schedule in place at the beginning of this option period. The deliverable will describe shellfish production practices, and consider categories such as freshwater, marine; east coast, west coast; class of shellfish (oyster, clam, etc.); and other aspects of types of production systems that will aid EPA in making determinations about whether there are subsets of shellfish production systems that may be point source discharges of pollutants. The characterization will include an assessment of inputs to the various types of shellfish production systems that may result in point source discharges of pollutants to waters of the U.S. The assessment will include the necessary information to determine not just whether these systems are technically point sources, but also any data that may demonstrate if they are posing threats to water quality, e.g., nutrient enrichment, impacts to native benthos, etc. As this information unfolds EPA may focus the task in a particular area or direction for additional investigation or follow-up.

Task 8. Supporting Development of NPDES Aquaculture Permits issued by EPA

Preventing and eliminating EPA permit backlogs is a high priority for EPA, and there may be elements of certain reissuance processes where contractor assistance would expedite finalization of a permit. EPA may or may not initiate work under this task during the remainder of this Option Period, depending on EPA Regional permit issuance schedules. Tasks will be permit-specific, and will be identified as EPA Regions identify permits for which they could use assistance. Permits that fall into this category will most likely include the following:

- a. EPA develops NPDES permits for off-shore aquaculture operations in federal waters. This process involves coordinated NEPA assessments with the Corps of Engineers and National Marine Fisheries Service, development of appropriate permit provisions per CWA §§ 402 and 403, fact sheet language, an administrative record, a biological evaluation per the Endangered Species Act, and response to comments. In the Gulf of Mexico, this also involves coordination with other federal agencies per the 2017 *MOU for Permitting Offshore Aquaculture Activities in Federal Waters of the Gulf of Mexico*. EPA Region 4 is currently developing permits for 2 proposed net pen/cage systems in the Gulf of Mexico, and EPA Region 9 is currently developing a permit for a proposed system off the coast of California. Under this task the contractor will provide targeted support to these permitting processes, for relevant tasks as determined by the Regional permit writers.
- b. EPA develops NPDES permits for fish hatcheries on tribal lands and in unauthorized states. This process includes reasonable potential analysis, WQBEL development and other standard NPDES elements. Currently pending permits are mostly in Regions 1 (Massachusetts and New Hampshire) and 10 (Washington, Oregon and Alaska), though other permits may be identified during this Option Period. Under this task the contractor will provide targeted support to these permitting processes, for relevant tasks as determined by the Regional permit writers.

Deliverables and Schedule: As permits are identified, the WACOR will set up kick-off call(s) with the relevant Regional permitting staff. Specific tasks will be identified at that time. The contractor will support EPA Region 9 in development of the NPDES permit for Rose Canyon. The specific tasks include mixing zone analysis, and support for developing a biological opinion for ESA consultation. These tasks may or may not be invoked during this Option Period, depending on the pace of permit development. If not completed during this Option period, they will likely be continued in the work assignment for the next Option Period. The contractor may also assist Region 4 with discrete aspects of Gulf off-shore aquaculture permit issuance to be determined, and other Regions with discrete aspects of fish hatchery permit issuance. This task may be invoked to assist with additional efforts related to aquaculture permitting, if specific needs arise during the Option Period and adequate funds/LOE remain.

PART IV. ADAPTATION AND RESILIENCE TOOLS

Task 9. Developing a Permit Writer's Step-by-Step Decision and Instruction Guide for Estimating Critical Flow Statistics Using Available Tools

There are a number of new and refined tools, as well as a progression of methods, for estimating critical flow statistics, which is an important element of developing NPDES water quality based effluent limits (WQBELs). Tools and approaches include:

1. *SWToolbox*: computes statistics at individual stream gages.
2. *WREG*: uses output from *SWToolbox* for stream gages throughout a region to compute regression equations for estimation of statistics at ungaged locations.

3. *StreamStats*: provides already developed results from *SWToolbox* and *WREG*.

These tools provide powerful new ways to improve accuracy of estimated critical flows at streams throughout the U.S. However, for the typical permit writer, how to use the tools, as well as understanding which tool or combination of tools is most appropriate for given situations, will be facilitated by some practical guidance.

Under this task the contractor will develop user-friendly, relatively simple step-by-step guidance to inform decision-making, as well as how to use these tools. The guidance will not replace, nor be as detailed as, the relevant User Manuals. However, this guide will be customized for the scenarios encountered by NPDES permit writers and will guide them through the decision-making process, (*e.g., the discharge is five-miles downstream from a gage, though there are no tributaries, diversions or land-use changes in between; what should I do?*). The guide will also provide basic instructions on how to use the tools.

After the guide is finalized the contractor may be asked to assist with some simple roll-out activities, including participation in EPA-sponsored webinar(s) for state and regional NPDES programs on the use of the USGS tools presented in the guide.

Deliverables and Schedule: Work on this task was initiated (and may have been completed) under WA 1-17. If work was not completed under WA 1-17, then efforts shall continue per the outline and schedule in place at the beginning of this option period to finalize the permit guide on using USGS tools to derive critical flow statistics. Efforts include coordination with EPA Regional and/or State permit writers and USGS. For the purpose of work plan development, the contractor shall assume no travel and no contractor conferencing facilities, i.e., any training will be via EPA web conferencing services.

Task 10. Providing Thermal Tools Training and Support

The contractor shall support thermal permit reviews and training for EPA Regional programs. This may include thermal modeling or mixing zone assessments for state or EPA permits, training of State and/or EPA permit writers in the use of CORMIX or other models, or other aspects of developing thermal limits.

Deliverables and Schedule: This task was established in WA 1-17. If efforts commenced under that work assignment, then the contractor shall continue those efforts as previously agreed upon with the WACOR. If work did not commence under WA 1-17, then efforts under this work assignment shall commence when the WACOR initiates the effort. The WACOR will set up calls with specific Regions to kick-off specific projects, as EPA Regional needs are identified. Projects may be focused on development of one or more permit, or may be broader training on particular aspects of developing thermal limits. For the purpose of work plan development, the contractor shall assume no travel and no contractor conferencing facilities, i.e., any training will be via EPA web conferencing services. For purposes of work plan development assume 50 hours.

PART V. NPDES MESSAGING

Task 11. Finding and Compiling Relevant Information and Case Studies on the NPDES Program

The NPDES program is 4 decades old, and despite of the many advances and improvements in water quality during that time, quantifying water quality improvements and other outcomes resulting from the implementation of the NPDES program is challenging. In this task the contractor will help discover, compile and summarize information from a variety of sources to tell comprehensive ‘big picture’ environmental successes of the program, as well as more focused outcomes, such as state-specific case studies and sector specific improvements. This should include the successes of other implementers, such as POTW operators or stormwater managers, where the NPDES program may be an important driver, but should not overshadow important accomplishments of other entities. The complementary aspect of all efforts should be clear. In addition, Information that highlights the ongoing challenges, and hence the continued relevance of the program, should be another element. The contractor will work with ACWA and state programs, with EPA Regions and headquarters and their available data sets, and will also seek other ways to highlight and tell NPDES success stories, e.g., linking reductions in CSOs to fewer beach closures, as supported by data. As appropriate, NACWA and WEF may also be partners in the effort, as determined by EPA. The research should feed into 3 general formats: 1-page fact sheets that highlight certain elements of the NPDES program; state-focused success stories or case studies; an NPDES program Esri StoryMap that can cohesively discuss the general successes of the program, and will likely incorporate elements of the other two products. EPA should be able to derive clear and discrete talking points from the information compiled to use in talks and other forums. EPA may produce these products, or may use the contractor to produce them, but in either case the contractor is responsible for finding and analyzing the necessary information to produce these products. Final products should be useful to EPA and State NPDES programs, general and technical audiences, and should try to express successes in

terms that will be relevant to general audiences, such as human health, aquatic biota recovery, recreational uses, etc. Important ancillary benefits should also be considered, such as water and energy efficiency, greening urban environments and flood management. Other indicators, such as economy or jobs, may also be included where they can be documented and supported. Also consider the multiple roles States and EPA play in building local capacity, including funding, technical support and organizational/management development. All materials should be composed within the context of how permitting accomplishes these benefits and why the public should have confidence in the organizations carrying out the work. EPA anticipates that the scope and direction of this project will evolve as some ideas and directions prove to be fruitful and others do not.

Deliverables and Schedule: This task was initiated under WA 1-17 and shall continue per schedules and outlines developed during that option period. The WACOR will facilitate state involvement via ACWA, EPA Regions and other partners, and the contractor will undertake the necessary follow-up with individual state programs identified via ACWA and Regional outreach, or with other partners identified by the WACOR. The WACOR will facilitate involvement of all national program subject matter experts for exploration of specific program areas, and the contractor will undertake the necessary follow-up with those SMEs. The schedule and content areas will evolve based on areas in which data and case studies are discovered. The contractor and EPA will communicate regularly during this evolution.

Quality Assurance Statement:

Most of the tasks in this work assignment are being carried forward from the WA 1-17, Amendment #2, and are already included in the project QAPP, as applicable. New projects under Task 2 may include the analysis of existing data, but do not involve the generation of new data. Therefore, some simple QAPP elements will be required.

EPA requires that all environmental data used in decision making be supported by an approved Quality Assurance Project Plan (QAPP). The contractor shall submit the QAPP within 15 days of the submittal of the work plan, or agreement between the WACO and contractor on the relevant Task strategy, as relevant.

Other Requirements:

Reporting

Reports shall be submitted in accordance with the reporting requirements of the contract. In addition, the contractor shall maintain bi-weekly telephone contact with the EPA work assignment manager (WACOR) to provide updates on progress and problems. All documents shall be delivered in the word processing format compatible with EPA, HTML, and/or PDF format, as requested by the WACOR. The contractor shall notify the WACOR immediately when expenditures of 75% and 90% of the work assignment LOE or funding (including pipeline costs) are reached.

The contractor shall be prepared to submit for inspection copies of all work in progress any time

as requested by the WACOR. The contractor shall not release information or comments on works performed under this work assignment without the WACOR's prior written authorization. Wherever practicable, all written materials submitted to EPA must be doubled-sided and on recycled paper. All computer disks submitted to the WACOR shall be scanned for, and identified as free from viruses.

The contractor shall submit drafts and final products in hard copy as well as on CD in a format compatible with Water Permits Division hardware.

Travel

All non-local travel shall be authorized in advance by the EPA CL-COR and shall be in accordance with the contract. Travel for any single task should not exceed \$1,000 unless trip has been pre-approved.

Information Collection

All collection of information and data shall be in accordance with the Office of Water Quality Management Plan and OMB requirements under the Paperwork Reduction Act.

Conference/Meeting Guidelines and Limitations

The contractor shall immediately alert the WACOR to any anticipated event under the work assignment which may result in incurring an estimated \$20,000 or more cost, funded by EPA, specific to that event, meeting, training, etc. Those costs would include travel of both prime and consultant personnel, planning and facilitation costs, AV and rental of venue costs, etc. The WACOR will then prepare approval internal paperwork for the event and will advise the contractor when appropriate signatures have been obtained. At that point, effort can proceed for the event. If the event is being sponsored by another EPA organization, the organization providing the planning is responsible for the approval.

| EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment | | | | | | Work Assignment Number 2-20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | <input type="checkbox"/> Other <input type="checkbox"/> Amendment Number: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Contract Number EP-C-16-003 | | | Contract Period 07/01/2016 To 06/30/2021 Base Option Period Number 2 | | | Title of Work Assignment/SF Site Name Natl Pretreatment Prgm Support | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contractor EASTERN RESEARCH GROUP, INC. | | | | | Specify Section and paragraph of Contract SOW See PWS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval | | | | | | Period of Performance From 07/01/2018 To 06/30/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: The contractor shall not commence work on this work assignment until 7/1/2018. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| SFO <input type="checkbox"/> Note: To report additional accounting and appropriations data use EPA Form 1900-69A. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Line</th> <th>DCN (Max 6)</th> <th>Budget/FY (Max 4)</th> <th>Appropriation Code (Max 6)</th> <th>Budget Org/Code (Max 7)</th> <th>Program Element (Max 9)</th> <th>Object Class (Max 4)</th> <th>Amount (Dollars)</th> <th>(Cents)</th> <th>Site/Project (Max 8)</th> <th>Cost Org/Code</th> </tr> </thead> <tbody> <tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table> | | | | | | | | | | Line | DCN (Max 6) | Budget/FY (Max 4) | Appropriation Code (Max 6) | Budget Org/Code (Max 7) | Program Element (Max 9) | Object Class (Max 4) | Amount (Dollars) | (Cents) | Site/Project (Max 8) | Cost Org/Code | 1 | | | | | | | | | | | 2 | | | | | | | | | | | 3 | | | | | | | | | | | 4 | | | | | | | | | | | 5 | | | | | | | | | | |
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| Authorized Work Assignment Ceiling | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contract Period: Cost/Fee: LOE: 07/01/2016 To 06/30/2021 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Work Plan / Cost Estimate Approvals | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Work Assignment Manager Name Kathryn Kazior <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div> | | | | | | | Branch/Mail Code: Phone Number: 202-564-2696 FAX Number: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Officer Name Robin Danesi <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div> | | | | | | | Branch/Mail Code: Phone Number: 202-564-1846 FAX Number: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other Agency Official Name <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div> | | | | | | | Branch/Mail Code: Phone Number: FAX Number: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contracting Official Name Brad Heath <div style="display: flex; justify-content: space-between;"> <div> _____ (Signature) </div> <div> 6/30/2018 _____ (Date) </div> </div> | | | | | | | Branch/Mail Code: Phone Number: 513-487-2352 FAX Number: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**PERFORMANCE WORK STATEMENT
CONTRACT EP-C-16-003
WORK ASSIGNMENT 2-20**

TITLE: National Pretreatment Program Support

WORK ASSIGNMENT CONTRACTING OFFICER'S REPRESENTATIVE (WACOR):

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|--|---|--|
| Kathryn Kazior WACOR Phone: (202) 564-2696 Fax (202) 564-6431 Christopher.Rebecca@epa.gov | <u>USPS Mailing Address</u> Water Permits Division 1200 Pennsylvania Ave., NW Mail Code 4203M Washington, DC 20460 | <u>Courier Address</u> EPA East Building 1201 Constitution Ave., NW Room 7329B Washington, DC 20004 |
| Rebecca Christopher Alternate WACOR Phone: (202) 546-2444 Fax (202) 564-6431 Kazior.Kathryn@epa.gov | | EPA East Building 1201 Constitution Ave., NW Room 7329E Washington, DC 20004 |
| Jan Pickrel Alternate WACOR, June to October 2018 Phone: (202) 564-7904 Fax: (202) 564-6431 Pickrel.Jan@epa.gov | | EPA East Building 1201 Constitution Ave., NW Room 7329K Washington, DC 20004 |

PERIOD OF PERFORMANCE: July 1, 2018 through June 30, 2019

PURPOSE: The Water Permits Division (WPD) within the Office of Wastewater Management (OWM) is responsible for the development and implementation of the National Pretreatment Program, which is a component of the National Pollutant Discharge Elimination System (NPDES) program. This program and its regulations address requirements for and oversight of Publicly Owned Treatment Works (POTWs) and Industrial Users (IUs, who are non-domestic dischargers), as well State programs to oversee the POTWs and IUs. These regulations and programs require states and POTWs to develop local pretreatment programs to assess, manage, and regulate pollutants introduced into POTWs from IUs. The goals of such pretreatment programs include reducing the risk to human health and aquatic life resulting from the POTW wastewater (effluent) discharges and sludge disposal options by preventing the interference of the POTW treatment plant operations and pass through of pollutants, to improve opportunities to recycle, reclaim, and reuse municipal and industrial wastewaters and sludges, and to prohibit the introduction of pollutants which result in the presence of toxic gases, vapors, or fumes that may cause acute worker health and safety problems. To achieve these goals, OWM is committed to developing and updating guidance materials and instructional materials to communicate such

existing, new, and newly revised requirements to IUs, municipalities, states, and EPA Regions.

OBJECTIVE: This work assignment will provide a broad base of technical and administrative tools to support EPA's implementation of the Pretreatment Program Regulations (40 CFR 403). Contractor support shall provide resources needed to support EPA and its State partners in the development of outreach materials (e.g., guidance, fact sheets, case studies, briefings), support training opportunities (e.g., workshops and webinars), and support assessment of POTW and state strategies (using EPA checklists and models, and compiling data from EPA databases).

In addition, existing new regulations, standards, and policies have been issued or in the process of being developed, with which existing guidance materials and instructional materials need to be updated and communicated, or for which new outreach materials need to be developed.

TASKS:

Task 0 - Work Plan, Budget Development and Management

The contractor shall participate in a kickoff conference call with the WACOR within 30 days of the work assignment's effective date.

The contractor shall prepare a detailed work plan and budget for the accomplishment of the indicated tasks in accordance with the clause Work Assignments (EPAAR 1552.211-74). The work plan shall include a description of: (a) proposed staff; (b) an estimate of hours to be spent on each task by each staff person (prime and subcontractors); and (c) a list of deliverables, with due dates and schedule for deliverables. This task also includes monthly progress and financial reports which shall conform to the requirements particularized to the clause, F.3 MONTHLY PROGRESS REPORT (EPAAR 1552.210-72) (JUN 1996).

The contractor shall meet with the WACOR either in person or via telephone approximately three to four (3-4) hours per month to discuss work assignment planning issues. During this regular meeting, the contractor shall be prepared to discuss updates for tasks outlined below and the contractor shall provide a summary update for tasks via email before each meeting.

Task 1: Rule Revisions Follow-up Activities: Guidance Manual Update and Informational Brochure Development [3.4, 3.7, 3.8]

EPA revised the General Pretreatment Regulations at 40 CFR Part 403 twice in 2005 ("Streamlining", 70 FR 60135, October 14, 2005, and "CROMERR", 70 FR 59848-89, October 13, 2005), once in 2015 (NPDES Electronic Reporting Rule, 80 FR 64064-158, October 22, 2015), once in 2016 (Unconventional Oil and Gas Extraction Effluent Guidelines, 81 FR 41845-57, June 28, 2016), once in 2017 (Dental Effluent Guidelines, 82 FR 27154-78, June 14, 2017). Regulation revisions affecting the pretreatment program are also forecast to be finalized this performance period for NPDES (proposed "NPDES Applications and Program Updates Rule", 81 FR 31343-31374, May 18, 2016) and other media (e.g., "Hazardous Waste Pharmaceuticals", 80 FR 58014-92, September 25, 2015). Consequently, EPA continues to review existing guidance manuals and informational brochures and prioritize them for updating in order to

ensure consistency with current regulation and policy.

The Office of Wastewater Management (OWM), also, in support of effluent limitation development for both NPDES Permits and IU Control Mechanisms, works with other EPA Offices to communicate results of studies, the development of new analytical methods and the use of monitoring tools. For example, OWM may summarize the results of an Office of Water/Office of Science and Technology (OST) industry sector “detailed study” conducted as part of the Effluent Guidelines Program into an informational brochure of approximately 5 pages in length to help permit writers or to improve potential permittees’ understanding of their regulatory responsibilities or might compile a set of “Frequently Asked Questions” into a document for publication.

For this task, the contractor shall support EPA by:

- For all documents:
 - Participating in EPA workgroup conference calls, collecting and compiling written comments and verbal comments received during the conference calls.
- For documents selected for revision:
 - Reviewing the existing manuals and identifying provisions that have been the subject of regulation or policy change since publication;
 - Recommending draft text to incorporate new regulation and policy change into the draft manuals.
- For documents that have received comments:
 - Recommending text to address comments received within 2 weeks of receipt of comments;
 - Editing the draft documents to incorporate EPA’s decision on the recommended ways to address received comments within 2 weeks of EPA direction;
 - Following receipt and incorporation of edits from EPA management review, the contractor shall process final document for publication and/or webposting.

Subtask 1A. Guidance Manual Updates [3.4, 3.8]: Document updates are currently in various stages of completion: some document updates are being drafted, some are in draft form and being reviewed by stakeholders and management, and some are being finalized after resolution of received comments. Documents #1 and #2 are companion documents and “over-arching” general programmatic documents, that may need additional edits as the other documents (further down on the list below) are updated and revised. For all documents, contractor shall provide technical editing services prior to web publication and conform to Agency web publication requirements. Per technical direction from WACOR, contractor shall assist EPA in comment resolution processes outlined below for each manual.

1. *Procedures Manual for EPA and States Reviewing a POTW Pretreatment Program Submission* (“Procedures Manual” update to October 1983 document) – WACOR has a draft final document into which stakeholder comments (EPA Regional staff and State

Coordinators) have been incorporated. EPA will provide electronic file to contractor. Contractor shall support EPA to identify needed revisions to this document, as needed, to ensure agreement with associated topics discussed in the documents below (particularly the Guidance Manual for POTW Pretreatment Program Development), as the documents below are updated and revised.

2. *Guidance Manual for POTW Pretreatment Program Development* (“Development Manual” update to October 1983 document) – WACOR is currently reviewing a draft document prepared under a different contract. EPA will provide electronic file to contractor. Contractor shall support EPA by revising document upon receiving comments from EPA, and shall support EPA in soliciting stakeholder comments (EPA Regional staff, State Coordinator, and POTWs/National Association of Clean Water Agencies). EPA expects to conduct comment solicitation in stages [e.g., first EPA followed by states and NACWA]. Contractor shall support EPA by indexing comments received and drafting responses to address the comments received, incorporating EPA approved revisions as necessary. Contractor shall support EPA in identifying corresponding topics in the Procedures Manual (#1, above) and drafting revised text to ensure agreement between these two companion documents.
3. *Guidance for Developing Control Authority Enforcement Response Plans* (“ERP Manual” update to September 1989 document) – EPA is currently reviewing a draft document prepared under a different contract. EPA will provide electronic file to contractor. Contractor shall support EPA by revising document upon receiving comments from EPA, and shall support EPA in soliciting stakeholder comments (EPA Regional staff, State Coordinator, and POTWs/National Association of Clean Water Agencies). EPA expects to conduct comment solicitation in stages [e.g., first EPA followed by states and NACWA]. Contractor shall support EPA by indexing comments received and drafting revised text to address the comments received, incorporating EPA approved revisions as necessary. Contractor shall support EPA in identifying corresponding topics in Manuals #1 and #2 (above) and drafting revised text to ensure agreement between these three documents.
4. *Industrial User Permitting Guidance Manual, Appendix I – Combined Wastestream Formula and Appendix J – Production-Based Standards* (Appendices were previously a standalone document entitled Guidance Manual for the Use of Production-Based Pretreatment Standards and the Combined Wastestream Formula, update to September 1985 document) – EPA is currently reviewing a draft document prepared under a different contract. EPA will provide electronic file to contractor. Contractor shall support EPA by revising document upon receiving comments from EPA, and shall support EPA in soliciting stakeholder comments (EPA Regional staff, State Coordinator, and POTWs/National Association of Clean Water Agencies). EPA expects to conduct comment solicitation in stages [e.g., first EPA followed by states and NACWA]. Contractor shall support EPA by indexing comments received and drafting revised text to address the comments received, incorporating EPA approved revisions as necessary. Contractor shall support EPA in identifying corresponding topics in Manuals #1 and #2 (above) and drafting revised text to ensure agreement between these three documents.

Subtask 1A Deliverables: Contractor shall recommend revisions to address comments within 2 weeks of receipt of comments from EPA and other stakeholders. Contractor shall revise final documents within 2 weeks of WACOR concurrence in suitable format for publication, and website posting.

Subtask 1B. Informational Brochures [3.4, 3.7, 3.8]: For items #1-3 below, documents are currently in various stages of completion: some document updates are being drafted, some are in draft form and being reviewed by stakeholders and management, and some are being finalized after resolution of received comments. Information from some of these documents will ultimately be incorporated into updates to the Guidance Manuals listed in Subtask 1A. For all documents, contractor shall provide technical editing services prior to web publication and conform to Agency web publication requirements. Per technical direction from WACOR, contractor shall assist EPA in comment resolution processes outlined below for each document.

1. *Streamlining Significant Non-Compliance (SNC) Factsheet* (“SNC Factsheet” based on 2005 regulation changes) – EPA is currently reviewing a draft document prepared under a different contract. EPA will provide electronic file to contractor. Contractor shall support EPA in soliciting stakeholder comments (EPA Regional staff only). Contractor shall support EPA by indexing comments received and drafting revised text to address the comments received, incorporating EPA approved revisions as necessary. Contractor shall support EPA by preparing document for finalization (technical editing, formatting, 508 compliance for webposting).
2. *Pretreatment Program pH Requirements for Industrial Users* (“pH FAQs”) – EPA is currently reviewing a draft document prepared under a different contract. EPA will provide electronic file to contractor. Contractor shall support EPA in soliciting stakeholder comments (EPA Regional staff only). Contractor shall support EPA by indexing comments received and drafting revised text to address the comments received, incorporating EPA approved revisions as necessary. Contractor shall support EPA by preparing document for finalization (technical editing, formatting, 508 compliance for webposting).

Per technical direction from WACOR, the contractor shall also anticipate developing 1 informational brochures (e.g., “Frequently Asked Questions” [FAQs] format or case study reports), designed to help NPDES permit writers and Pretreatment Program Coordinators on a variety of topics pertinent to program implementation, typically by reformatting previously published materials (e.g., excerpting preamble language from a published regulation on a particular topic). Example subjects might include recent changes in the federal regulations, recent studies completed on particular industry sectors, policy issues or Frequently Asked Questions compilations for various topics.

Subtask 1B Deliverables: Draft document shall be completed within 30 days of technical direction. Upon receipt of comments from EPA, contractor shall submit revised draft-final version of document to EPA within 2 weeks of EPA comments. Contractor shall revise final documents within 2 weeks of WACOR concurrence in suitable format for publication, and website posting.

Task 2: EPA-Regional and State Technical Activities Support [3.1, 3.4, 3.7, 3.8, 3.9, 6.0, 6.1, 7.0, 9.0]

Subtask 2.A. Audits and Inspections [9.0]: The contractor shall support EPA in conducting on-site program reviews and more formal program “audits” or inspections of States and/or POTW Pretreatment programs [Pretreatment Compliance Audit or PCA, and Pretreatment Compliance Inspection or PCI, respectively]. Inspections shall include an assessment of the extent to which States, POTWs or industrial discharges to POTWs, are complying with requirements in approved Pretreatment Programs, POTW National Pollutant Discharges Elimination System (NPDES) Permits and IU permits, State and federal regulations. The contractor shall follow the procedures outlined in the EPA audit guidance manual, preparing forms and a narrative summary. See Control Authority Audit Checklist and Instructions (EPA #833/B-10-001, February 2010) http://www3.epa.gov/npdes/pubs/final_pca_checklist_and_instructions_%20feb2010.pdf and updates, and also Form 3560. Refer also to updated IU Inspection and Sampling Manual (EPA #831/B-17-001, January 2017, <https://www.epa.gov/sites/production/files/2017-01/documents/iuinspect.pdf>). For Pretreatment Compliance Inspections (PCIs), the same general procedures are followed. For both PCAs and PCIs, certain program elements (e.g., legal authority review, local limits development) may be identified by the EPA Regional coordinator per site for exclusion from the overall review.

Audits and Inspections shall be performed by credentialed staff that satisfy the following requirements:

- Inspector credentials as required by Contractor Credentials Guidance Memo (dated 31 May 2013), including, but not limited to, completion of mandatory inspector training requirements identified in EPA Order 3500.1
 - Minimum 5 years’ experience performing pretreatment audits and inspections of POTWs and industrial users, including:
 - Pretreatment program development and evaluation
 - Standards application (standard and specific prohibitions, categorical standards, local limits)
 - Local limits development
- If a team of two or more employees is conducting an audit or inspection, at least one member of the team should have a minimum of five years’ experience performing pretreatment audits and inspections.
- Satisfactory knowledge and skills required in Table 2.2 of IU Inspection and Sampling Manual

EPA or the State will furnish the contractor with background documents (POTW permit and fact sheet, annual report, prior audit report) particular to each POTW Pretreatment Program, with which the contractor is expected to be familiar prior to the audit/inspection. Such familiarization is expected to take approximately 8 hours of collective staff time prior to each audit. The contractor shall not conduct any sampling or analysis of POTW or industrial user influent or effluent, nor statistical sampling.

The contractor shall support EPA Region 1 for an audit of the State of Vermont industrial pretreatment program, along with a review of the State Legal Authority. This audit should be complete by the end of FY18 (end of September 2018).

Per technical direction from WACOR, contractor shall support EPA in the following activities. The contractor shall estimate its manpower and cost requirements based upon the following projections.

- In Region 5, contractor shall estimate its manpower and cost requirements to have three staff members conduct a PCI for the Metropolitan Water Reclamation District of Greater Chicago with 10 IU inspections.
- Location unspecified: Pretreatment Compliance Audit of 5 small to medium POTW pretreatment programs (< 15 Significant Industrial Users (SIUs) to begin upon WACOR identification of locations.
- Location unspecified: Pretreatment Compliance Inspections of 5 small to medium POTW pretreatment programs (< 15 Significant Industrial Users (SIUs) to begin upon WACOR identification of locations.

Subtask 2A Deliverables: Draft audit/inspection report due within 30 days of conducting onsite activities. Draft report will be revised and finalized within 10 days of the WACOR providing comments to contractor.

Subtask 2B. Program reviews [3.1, 3.4]: Per technical direction from WACOR, the contractor shall support EPA's assistance to Regions in examining received State or POTW pretreatment reports, typically as a more in-depth analysis of a single programmatic element. Typical documents for review include "industrial waste inventories" (or "survey" identifying industrial pollutant sources to POTWs), local limits development packages, local ordinances (assessment of legal documents supporting local pretreatment program strategy), or annual POTW reports (submissions in compliance with 40 CFR 403.12(i)). Contractor is advised to calculate manpower and cost requirements based upon projections:

- 5 Local Limit Reviews
- 2 Sewer Use Ordinance and/or Enforcement Response Plans
- 20 Annual Reports
- 2 State-wide "industrial waste inventory"

No travel is required for these reviews.

Subtask 2B Deliverables: Draft program review summary, within 30 days of written technical direction to begin the effort. Draft reports will be revised and finalized within 10 days of the WACOR providing comments to contractor.

Subtask 2C. Meeting Support, Conferences, Training Events [3.9, 6.1]: The contractor shall support EPA in conducting training on pretreatment, industrial and municipal wastewater topics. General Meeting and Training Support shall include procuring conference space, compiling and updating already developed training materials or developing specialized training materials for a

particular program subject or area (e.g., ICIS data entry and using ECHO, dental regulation implementation, hazardous waste, anaerobic digesters), drafting proposed agenda following conference call with EPA, registering students for the training, compiling handout materials for students, presenting materials (as part of a team of EPA, state, and municipal representatives). Depending on the specific training event and topics, the bulk of the student handout materials may be provided electronically for download.

All training events are pending technical direction from WACOR. The contractor is advised to calculate its manpower and cost requirements based on training support expected for:

- 1 events of 2 day in July 2018 duration for approximately 100 municipal and state employees, coordinated with EPA Region 5 pretreatment staff, on general pretreatment program topics. Locations will be Indianapolis, IL. Agenda, materials and conference space have already been arranged.
- 1 event of 3-day duration in, at EPA-Headquarters, for approximately 30 personnel (i.e. National Pretreatment Meeting)
- 3 events of 2-day duration for approximately 100 municipal and state employees, coordinated with EPA Regional pretreatment staff, on general pretreatment program topics. Locations will be comparable to costs for a training in Chicago, IL.

When securing space for events, contractor shall give preference to no-cost local municipal or state or federal facilities for conference space before contracting with conference space for cost. Hotel “block of rooms” for participants shall only be needed to be reserved for the Regional and municipal/state event, and location will be communicated to contractor by EPA COR after consultation with applicable EPA Region staff.

Subtask 2C Deliverables: The contractor shall support EPA with development of agenda, presentation materials, and instructors. A draft agenda shall be finalized at least 30 days prior to each event. Draft presentation and training material shall be finalized within 15 days prior to each event. Agenda, presentations, training materials and compilation of student handouts shall be finalized 5 days prior to each event. Contractor shall finalize meeting notes and action items within 10 days following the event. Comments from EPA shall be incorporated within 5 days of EPA direction. Contractor shall develop event evaluations and finalize evaluation reports within 10 days following the event.

Subtask 2D. Webinar Support [6.0, 6.1]: The WACOR will identify 4 topics which the contractor shall develop (or convert an existing topic) into a training module format (typically Microsoft PowerPoint compatible), and provide webinar support. The Webinars have not been scheduled as of yet, and may be spaced equally throughout the period of performance. For planning purposes, the contractor shall assume that a webinar will be approximately 1.5 hours in length and may be ‘attended’ by up to 1000 connections and shall be archived and posted with access on the EPA website for future viewing.

Topics will be determined during scheduled conference calls with the WACOR within 30 days of work assignment issuance. Anticipated topic areas may include:

- Calculating Permit Limits for Industrial Users (Combined Wastestream Formula and Production-Based Standards)
- Legal authority and Enforcement Response Plans
- Reporting under 40 CFR 403.12(j) and (p)
- Data tools for Permit Writers and Permittees
- Hauled Waste and Anaerobic Digesters
- Industrial User Inspections

Subtask 2E Deliverables: The contractor shall be responsible for providing staff support for the following items:

- Assist EPA with setting up webinar date, identifying necessary equipment and making appropriate reservations for webinar.
- Assist EPA in Notifications/Advertisement of Webinar, including an announcement on EPA's webpage. Announcements shall be broadcast at least 30 days prior to event.
- Assist in setting up and managing enrollment for the webinar using the appropriate designated EPA platform (e.g., Adobe Connect), support for managing registration of participants and providing webinar logistics.
- Work with EPA to finalize slides and other training materials (limited support required). Agenda, presentations, and training materials shall be finalized 5 days prior to each event.
- Develop and distribute certificates of participation to attendees.
- Develop event evaluations and finalize evaluation reports within 5 days following the event.
- Assist EPA to arrange for recording and archiving of the webinar on an EPA webpage within 5 days of event.

Task 3: EPA National Program Implementation Support [3.1, 3.4, 3.7, 6.0, 7.0]

The contractor shall provide general program support for a variety of technical and administrative activities.

Subtask 3A. Oversight Activities [3.1]: EPA has developed permit quality checklists for use in assessing NPDES permits issued to POTWs and IU permits. EPA checklists and assessment guidance are currently being developed in a separate work assignment. EPA will focus on indirect dischargers in the food processing sector both in cities with and without pretreatment programs. EPA has developed a draft checklist and guidance for this review process.

For states where EPA is the Pretreatment Program Approval Authority, following technical direction, the contractor shall draft Pretreatment PQR reports that characterize the results of the permit assessment (e.g., identifying action items to return permits to compliance with regulatory requirements and policy, deficiencies in documentation, etc.) using a format provided by the WACOR, report on compliance activity status (typically obtained from EPA Integrated Compliance Information System database (ICIS-NPDES)).

Permit Quality Reviews in progress or anticipated for FY18-19 include:

1. Illinois
2. Delaware

Contractor shall anticipate conducting a total of 31 PQRs. Work shall not begin until technical direction from WACOR.

Subtask 3A Deliverables: Draft Pretreatment PQR report shall be completed within 30 days of technical direction. The contractor shall edit the draft documents to incorporate EPA's comments within 2 weeks of receipt of EPA's comments.

Subtask 3B. Data Management [3.1, 3.4]. EPA issued the NPDES Electronic Reporting Rule on October 22, 2015 <http://www2.epa.gov/compliance/final-national-pollutant-discharge-elimination-system-npdes-electronic-reporting-rule>.

- Electronic Reporting by POTWs of annual pretreatment program reporting is required in accordance with Phase II of the rule, i.e., 2020.
- Electronic Reporting by Industrial Users for which States and EPA are the Control Authority is required in accordance with Phase II of the rule, i.e., 2020.

WACOR and WPD Pretreatment Team are members of the Agency workgroup to support development of forms and guidance for implementation of this rulemaking.

The first step in receiving reports electronically requires entry of "facility level data", permit limits information, and other system required elements into ICIS-NPDES. Generally speaking, this may be supported by uploading of data from spreadsheets.

1. Per technical direction from WACOR, contractor shall support EPA to update facility level data [input data into spreadsheets provided by WACOR] for Industrial Users with either the EPA or State(s) are the Control Authority.
2. Per technical direction from WACOR, contractor shall support EPA in updating, as necessary, existing ICIS-NPDES pretreatment data entry guidance, as forms may have changed with the promulgation of the subject rulemaking.

Contractor shall assume 5 IU Facility Level spreadsheets for purposes of estimating cost and manpower.

Subtask 3B Deliverables:

1. Contractor shall provide updated spreadsheets of IU facility level data within 30 days of assignment.
2. Contractor shall provide edits to the Draft Revised Data Entry Guidance due within 2 weeks after issue has been identified.

Subtask 3C. Support EPA communications and outreach [3.7, 6.0, 7.0]: Per technical direction from WACOR, contractor shall:

1. Attend and summarize discussions from conference calls with EPA Regional Pretreatment Coordinators (typically monthly) and conference calls with State Pretreatment Coordinators (typically held every other month). Contractor shall add metadata to call summaries when posting to SharePoint.
2. Summarize or index significant discussions (including from Listserve) when identified by EPA. Contractor shall assume 4 listserv summarizations for purposes of estimating cost and manpower.
3. Assist EPA with enhancements and maintenance of EPA Pretreatment Program share sites, including support of uploading documents to Pretreatment Program SharePoint sites;
4. Support EPA with Pretreatment public website enhancements and maintenance.

Subtask 3C Deliverables:

1. Draft conference call summaries within five working days of the call date.
2. Listserv summaries within five working days of technical direction from EPA.
3. Posting of documents to share sites within five working days of identification.
4. Website edits within five working days of technical direction from EPA.

QUALITY ASSURANCE STATEMENT

QA Statement: EPA requires an approved QAPP whenever tasks involve the generation, distribution or use of environmental data which will be used, or has the potential for being used, in environmental decision making. Environmental data is information that describes environmental processes, locations or conditions, and health effects or consequences. It can be collected directly from measurements (primary data), produced from models, or compiled from other sources (existing or secondary data). Tasks included above do not involve collecting, assessing, or calculations using environmental data. A Work Assignment level QAPP is not necessary.

OTHER REQUIREMENTS

Software Applications and Accessibility

Word processing files delivered to the Government shall be Microsoft Word, 8.0 or higher. All software and electronic information technology shall conform to the requirements relating to accessibility as detailed to the 1998 amendments to the Rehabilitation Act, particularly, but not limited to, § 1194.21 Software applications and operating systems and § 1194.22 Files that are available on the website will be delivered to the contractor. Web-based intranet and internet information and applications. See: <http://www.section508.gov>.

- Preferred text format: MS Word, 8.0 or higher (MS Office 2007 or higher)
- Preferred presentation format: Power Point, Office 2007 or higher
- Preferred graphics format: Each graphic is an individual graphic file (.bmp, .gif, .jpeg, .tif, .png files preferred – contractor shall deliver full-sized images or vector-based graphics unless otherwise requested.)

- Preferred portable format: Adobe Acrobat, Version 6.0

Reporting

Progress reports shall be submitted in accordance with the reporting requirements of the contract. In addition, the contractor shall maintain contact with the WACOR to advise of progress and problems. All documents shall be delivered in Word, Excel, HTML, and/or PDF format, as requested by the WACOR. The contractor shall notify the WACOR immediately when expenditures of 75% and 90% of the work assignment LOE or funding (including pipeline costs) are reached.

The contractor shall be prepared to submit for inspection copies of all work in progress any time as requested by the WACOR. The contractor shall not release information or comments on works performed under this work assignment without the WACOR's prior written authorization. Wherever practicable, all written materials submitted to EPA must be doubled-sided and on recycled paper. All computer disks submitted to the WACOR shall be scanned for, and identified as free from viruses.

Travel

All travel shall be approved in advance by the Contract-Level Contracting Officer's Representative (CL-COR) and shall be in accordance with the contract. Travel is expected to occur for specifically Task 2.

Information Collection

All collection of information and data shall be in accordance with the Office of Water Quality Management Plan and OMB requirements under the Paperwork Reduction Act.

Meetings, Conferences, Training Events, Award Ceremonies and Receptions

All appropriate clearances and approvals required by Agency policy in support of any and all conference related activities and expenses, including support of meetings, conferences, training events, award ceremonies and receptions, shall be obtained by the CL-COR as needed and provided to the Contracting Officer. Work under conference related activities and expenses shall not occur until this approval is obtained and provided by the CL-COR.

Conference / Meeting Guidelines and Limitations

The contractor shall immediately alert the WACOR to any anticipated event under the work assignment which may result in incurring an estimated \$20,000 or more cost, funded by EPA, specific to that event, meeting, training, etc. Those costs would include travel of both prime and consultant personnel, planning and facilitation costs, AV and rental of venue costs, etc. The WACOR will then prepare internal approval paperwork for the event and will advise the contractor when appropriate signatures have been obtained. At that point, effort can proceed for the event. If the event is being sponsored by another EPA organization, the organization providing the planning is responsible for the approval.

| Table: Deliverables Schedule | | |
|--|--|--|
| Task | Deliverables Summary | Due Date |
| Task 1.A: Guidance Manual Updates | 1. Recommend text to address comments received 2. Finalize draft documents for publication and webposting | 1. Within 2 weeks of receipt of comments from EPA 2. Within 2 weeks of EPA direction |
| Task 1.B: informational brochures or FAQs | 1. Draft Fact Sheet 2. Revisions to Fact Sheet 3. Finalize draft documents for publication and webposting | 1. Within 30 days of receipt of information from WACOR 2. Within 2 weeks of EPA comments 3. Within 2 weeks of EPA direction |
| Task 2.A: Audits and Inspections | 1. Draft Audit and/or Inspection Report 2. Final Audit and/or Inspection Report | 1. Draft reports due within 30 days of conducting onsite activities. 2. [Draft] final reports will be revised and finalized within 10 days of WACOR providing comments to contractor |
| Task 2.B: Program Reviews | 1. Draft Program Review Report 2. Final Program Review Report | |
| Task 2.C: General Meeting and Training Support | 1. Draft agenda 2. Draft presentation and training material 3. Final agenda, presentations and training materials 4. Draft meeting notes 5. Finalize meeting notes 6. Summary of conference evaluations | 1. At least 30 days prior to event 2. At least 15 days prior to event 3. At least 5 days prior to event 4. Within 10 days following event 5. Within 5 days of EPA direction 6. Within 10 days following event |
| Task 2.D: Webinars | 1. Announcement of webinar 2. Finalize agenda, presentations and training material 3. Summarize evaluations 4. Archiving and posting webinar | 1. At least 30 days prior to event 2. At least 5 days prior to event 3. Within 5 days of event 4. Within 5 days of event |

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|--|---|---|
| Task 3A: Continued Oversight Activities | 1. Draft PQR Report 2. Edits of draft PQR Report | 1. Within 30 days of technical direction 2. Within 2 weeks of receipt of EPA comments |
| Task 3B: Data Management Strategy | 1. Updated spreadsheets 2. Edits to Draft Revised Data Entry Guidance. | 1. Within 30 days of receipt of materials from EPA 2. Edits submitted within 2 weeks of EPA direction |
| Task 3C: EPA communications and outreach | 1. Conference call summaries 2. Listserv summaries 3. Revised/posting of documents on SharePoint or EPA website | 1. Within 5 working days of call date 2. Within 5 working days of technical direction 3. Within 5 working days of technical direction |

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|---|---|---|-------------------------------|----------------------------|----------------------------|-------------------------|----------------------------|---------|-------------------------|------------------|
| EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment | | Work Assignment Number 2-23 | | | | | | | | |
| | | <input type="checkbox"/> Other <input type="checkbox"/> Amendment Number: | | | | | | | | |
| Contract Number EP-C-16-003 | Contract Period 07/01/2016 To 06/30/2021 Base Option Period Number 2 | Title of Work Assignment/SF Site Name Vessel Discharge Management | | | | | | | | |
| Contractor EASTERN RESEARCH GROUP, INC. | | Specify Section and paragraph of Contract SOW See PWS | | | | | | | | |
| Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval | | Period of Performance From 07/01/2018 To 06/30/2019 | | | | | | | | |
| Comments: | | | | | | | | | | |
| <input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund | | | | | | | | | | |
| SFO <input type="checkbox"/> Note: To report additional accounting and appropriations date use EPA Form 1900-69A. | | | | | | | | | | |
| Line | DCN (Max 6) | Budget/FY (Max 4) | Appropriation Code (Max 6) | Budget Org/Code (Max 7) | Program Element (Max 9) | Object Class (Max 4) | Amount (Dollars) | (Cents) | Site/Project (Max 8) | Cost Org/Code |
| 1 | | | | | | | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |
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| Authorized Work Assignment Ceiling | | | | | | | | | | |
| Contract Period: | | Cost/Fee: | | LOE: | | | | | | |
| 07/01/2016 To 06/30/2021 | | | | | | | | | | |
| This Action: | | | | | | | | | | |
| | | | | | | | | | | |
| Total: | | | | | | | | | | |
| Work Plan / Cost Estimate Approvals | | | | | | | | | | |
| Contractor WP Dated: | | | | Cost/Fee | | | | LOE: | | |
| Cumulative Approved: | | | | Cost/Fee | | | | LOE: | | |
| Work Assignment Manager Name Jack Faulk | | | | | | | Branch/Mail Code: | | | |
| _____ (Signature) | | | | | | | _____ (Date) | | | |
| Project Officer Name Robin Danesi | | | | | | | Branch/Mail Code: | | | |
| _____ (Signature) | | | | | | | _____ (Date) | | | |
| Other Agency Official Name | | | | | | | Branch/Mail Code: | | | |
| _____ (Signature) | | | | | | | _____ (Date) | | | |
| Contracting Official Name Brad Heath | | | | | | | Branch/Mail Code: | | | |
| _____ (Signature) | | | | | | | 7/1/2018 (Date) | | | |
| | | | | | | | Phone Number: 202-564-0768 | | | |
| | | | | | | | FAX Number: | | | |
| | | | | | | | Phone Number: 202-564-1846 | | | |
| | | | | | | | FAX Number: | | | |
| | | | | | | | Phone Number: 513-487-2352 | | | |
| | | | | | | | FAX Number: | | | |

**PERFORMANCE WORK STATEMENT
CONTRACT EP-C-16-003
WORK ASSIGNMENT 2-23**

TITLE: Vessel Discharge Management

WORK ASSIGNMENT CONTRACTING OFFICER'S REPRESENTATIVE (WACOR):

| | | |
|--|--|--|
| Jack Faulk Phone: 202-564-0768 Fax: 202-564-6392 faulk.jack@epa.gov | <u>USPS Mailing Address</u> US EPA Mail Code 4203M 1200 Pennsylvania Ave, NW Washington, DC 20460 | <u>Courier Address</u> US EPA Room 7329F 1201 Constitution Ave, NW Washington, DC 20001 |
|--|--|--|

PERIOD OF PERFORMANCE: July 1, 2018 through June 30, 2019

ESTIMATED LEVEL OF EFFORT: 4,000 hours

BACKGROUND: Due to a 2006 court order, EPA began permitting incidental vessel discharges from many vessels on February 6, 2009. The current 2013 Vessel General Permit (VGP) regulates discharges incidental to the normal operation of vessels operating in a capacity as a means of transportation. The VGP includes general effluent limits applicable to all discharges; general effluent limits applicable to 27 specific discharge streams; narrative water-quality based effluent limits; inspection, monitoring, recordkeeping, and reporting requirements; and additional requirements applicable to certain vessel types.

On July 31, 2008, Senate bill S. 3298 was signed into law (P.L. No. 110-299). This law generally imposed a two-year moratorium during which time neither EPA nor states can require NPDES permits for discharges incidental to the normal operation of commercial fishing vessels and other non-recreational vessels less than 79 feet. Among other things, the moratorium did not apply to ballast water. P.L. 110-299 also directed EPA to conduct a study of vessel discharges and issue a report to Congress. This report was finalized in August 2010. In September 2014, EPA promulgated the 2013 Small Vessel General Permit (sVGP) to cover those vessels in the event the moratorium ended. While the moratorium for these vessels was extended several times, it did expire in January 2018.

PURPOSE AND OBJECTIVE: The purpose of this work assignment is to support EPA's National Pollutant Discharge Elimination System (NPDES) vessel permitting program and other vessel related discharges. Under this work assignment, the Contractor shall provide technical support to EPA Office of Wastewater Management (OWM) Water Permits Division (WPD) to develop technical materials for EPA's use in implementing the vessel general discharge management programs. The support shall focus primarily on developing background and supporting information for EPA's vessel permitting program, conducting research for vessel related discharge issues, and developing and providing outreach to affected stakeholders. The Contractor shall provide support to EPA with the following tasks:

- Develop a work plan and provide monthly progress reports;
- Provide quality assurance, including developing a Supplemental Quality Assurance Project Plan (SQAPP), as necessary to cover work under this work assignment;
- Provide research and technical support for EPA's vessel permitting program, including development of technical development documents on specific topics (e.g., ballast water management);
- Support development of draft/final VGP/sVGP documentation as part of the permit issuance process;
- Provide technical support implementing EPA's obligations as a result of the successful Endangered Species Act (ESA) consultation for the sVGP and VGP; and
- Support implementation and outreach for the VGP and sVGP and other vessel-related program activities.

SCOPE OF WORK

TASK 0: WORK ASSIGNMENT MANAGEMENT

The Contractor will prepare and submit a work plan and cost estimate for all tasks of the work assignment within 30 calendar days of receipt of the WA. The work plan shall present the technical approach by task, including any assumptions used for the approach; the project schedule and deliverables; staffing details; level of effort by task, staff member, and professional labor mix; and the estimated cost. Also, the Contractor will respond to any requests and technical directives from the WACOR within 5 business days or as otherwise specified in the request or technical directive.

Regularly scheduled bi-weekly conference calls and in-person meetings, as needed, will be coordinated between EPA's WACOR and the Contractor to discuss the work assignment and progress of tasks. The Contractor shall provide electronic copies of the monthly progress reports to the EPA Project Officer (PO), WACOR, and alternate WACOR. Each progress report shall describe the technical work and expenditures for the same time period as the corresponding invoice. The reports shall list by task the amount of work completed and include a table of hours by personnel for each task. The reports also shall identify any problems or difficulties.

The Contractor shall immediately notify the WACOR by telephone of any problems that may impede performance, along with any corrective actions needed to solve the problems. The Contractor shall notify the CO and WACOR in writing when 75% of the authorized work assignment LOE/labor hours have been expended.

In addition, the Contractor shall provide an accountability report about how and whether the activities/reports in this work assignment have furthered EPA's goals toward protecting the Great Lakes from invasive species (e.g., a short description of how funds were used for both this and previous contract periods, how much was spent on each subtask, and why the work is directly relevant to the goal of preventing the introduction of new invasive species to the Great Lakes and slowing their dispersal pathways in those water bodies).

TASK 1: QUALITY ASSURANCE

Quality Assurance Project Plans are required under the Agency's Quality Assurance Policy CIO-2105, formerly EPA Order 5360.1A2 and implementing guidance CIO-2105-P-01-0. All projects that involve the generation, collection, analysis and use of environmental data must have an approved QAPP to assure the quality, objectivity, integrity and utility of the data and information used in the project.

QA Project Plan Requirements

EPA policy requires that an approved Quality Assurance Project Plan (QAPP) or programmatic Quality Assurance Project Plan (p-QAPP) be in place for work that involves the collection, generation, evaluation, analysis or use of primary environmental data. The QAPP or p-QAPP defines and documents how specific data generation and collection activities shall be planned, implemented, and assessed during a particular project. This contract has an approved p-QAPP for all necessary work envisioned under this work assignment.

The Contractor shall adhere to the approved p-QAPP when generating, collecting and determining the use of data and information for any applicable task under this work assignment. If any work required under this work assignment is not covered under the p-QAPP, the Contractor shall prepare a supplemental QAPP for those tasks.

TASK 2: TECHNICAL AND IMPLEMENTATION SUPPORT TO EPA'S VESSEL GENERAL PERMIT PROGRAM

The Contractor shall support EPA's development of technical and factual materials for EPA use in implementing the Vessel General Permitting Program. Work may include literature reviews, developing background materials, researching technologies, and working with industry experts and government officials to develop a solid foundation for instituting national permit effluent limits and other conditions.

Subtask 2A: Update and Develop TDDs

The Contractor shall support the development of technical development documents (TDDs), in addition to the TDD identified in Task 3, including work on documents started and/or completed under previous work assignments. EPA expects these efforts to include technical memoranda (plus appendices with relevant data) describing the sources of information, key findings from those sources, technological capabilities and efficacy, cost information where relevant, and what conclusions, if any, can be drawn from this information. Once final, these TDDs shall be of sufficient quality to place in the docket and serve as part of the administrative record for decision-making. Subject areas which may be researched include, but will not be limited to:

- Monitoring approaches to assess vessel discharges
- Technical feasibility of using environmental acceptable lubricants on vessels, including the extent to which vessels have converted to these applications as a result of VGP/sVGP requirements.
- Use of exhaust gas cleaning systems to control sulfur emissions

- Other discharge types and treatment options as necessary.

Unless otherwise specified in the technical direction from the WACOR, within 1 week of receiving written technical direction to proceed on a TDD, the Contractor shall submit an annotated outline of the TDD and appendices identifying the information, conceptual approaches, and analyses, and scope of issues to be addressed in the technical memorandum. After approval by the WACOR, the Contractor shall prepare and submit a draft version of the TDD within 1 month and respond to EPA within 1 week and submit the final TDD within 2 weeks of receiving technical comments from the WACOR. EPA estimates that one TDD approximately 25-50 pages in length to be developed as part of this task.

Subtask 2B: Permit Development Support

The Contractor shall support issuance/reissuance/modification of EPA's vessel general permits consistent with any technical direction provided by the WACOR and may include support to:

- Collect and compile information and develop analyses, studies, and other supporting documentation;
- Draft and format the permit, fact sheet, and other permit documents;
- Prepare documents necessary for Endangered Species Act (ESA) consultation;
- Economic and benefits analyses to examine the market and non-market impacts from permit issuance;
- Comment response categorization, entry into a comment response database, draft responses to comments, and prepare the response document; and
- Compile a permit docket.

This work shall build off existing permit documents and analyses prepared for previous permits taking into account any revisions to those permits as well as any changes in other considerations that affect such analyses.

Task 3: Ballast Water Management Evaluation

Managing the discharge of ballast water is a critical component of aquatic nuisance species control. This task includes completion of a technical development document, started under a previous work assignment assessing the state of ballast water management systems for vessels that transit into freshwater as well as marine ecosystems, including options available for both existing and new vessels. This assessment will investigate the full range of ballast water management system (BWMS) options, including activities such as best management practices, ballast water exchange, and treatment. Both on-ship and off-ship (e.g., on-shore) ballast water treatment systems options will be considered for the full range of domestic and international vessels covered under EPA's Vessel General Permit (VGP) as well as vessels less than 79 feet in length that may otherwise be covered under EPA's Small Vessel General Permit (sVGP). The report will provide BWMS options for both inland and marine vessels, including vessel activities in the Great Lakes (i.e., pre- and post-2009 Lakers and other vessels traversing the Great Lakes).

The assessment will consider biological effectiveness, cost, logistics, operations, regulatory implications, safety, and any other areas that may affect ballast water management, including challenges presented by freshwater ecosystems. The assessment will look at both shipboard

treatment and off-ship reception facilities to determine the availability and economic and logistical feasibility of these two options for the treatment of ballast water from the different categories/classes of vessels. Specifically, this assessment will consider if onshore treatment or other off-ship treatment, such as on a treatment barge, are reasonable, or preferred, alternatives to shipboard treatment for any universe of vessels covered under the VGP, including an assessment of the time necessary to implement such an approach if such is found to be a reasonable alternative. Unique characteristics of classes/categories of vessels will be considered in context with BWMS options to determine whether specific management/treatment options are “available” for these vessels considering the unique operational and design constraints of such vessels (e.g., large volumes of fresh cold water required and the short duration of trips for Lakers). This assessment will also evaluate Lakers built after 2009 since these vessels face many of the same challenges and constraints as pre-2009 Lakers. As appropriate, this assessment will evaluate a variety of environmental (e.g., temperature and salinity), operational (e.g., ballasting flow rates and holding times), and vessel design (e.g., ballast volume and unmanned barges) parameters to consider in determining applicable discharge requirements. The outline for this document is as follows:

1. Introduction
2. Ballast Water Regulations/Requirements to Prevent ANS Introduction and Propagation
3. Vessel Universe
4. Best Management Practices
5. Ballast Water Treatment Principles
6. Type Approved Ballast Water Management Systems
7. Ballast Water Management System Costs
8. Ballast Water Management System Performance
9. Compliance Monitoring
10. Assessment of Off-ship Ballast Water Treatment
11. Great Lakes Ballast Water Management Considerations
12. Ballast Water Alternatives

TASK 4: EVALUATE AQUATIC NUISANCE SPECIES IN THE GREAT LAKES

Under a previous work assignment, the Contractor supported the development of an EPA report entitled: “Analysis of Ballast Water Discharges into the Great Lakes from Overseas Vessels from 2010 to 2013” which provides information on ballast water discharges from ocean-going vessels entering the Great Lakes. Information in that report will be useful to assess aquatic nuisance species invasion risks into the Great Lakes by these vessels. After that report, the Contractor initiated the development of two related reports on: (1) interlake transfers of ballast water within the Great Lakes and (2) contributions of ballast water into the Great Lakes from vessels coming from coastal/inland locations. These two reports will provide data and maps, as available, reflecting routes of the full range of vessels into and within the Great Lakes. These reports will also include data regarding the populations, ranges, and environmental characteristics of these ranges (salinity, temperature, etc.) of existing ANS in the Great Lakes. The final reports will describe how interlake transfers and coastal/inland transfers of ballast water may occur and the routes/vessels/vectors that pose the highest risk for spreading existing ANS, or future ANS that may enter the Great Lakes. Under this Task, the Contractor will finalize these two reports, including responding to any comments from EPA and other selected reviewers as agreed to between the WACOR and the Contractor. Potential follow-up work will include using information identified in this report to develop a suite of strategies or tools to address inter-lake transfer of ANS.

Under this work assignment, the Contractor shall also support completion of three additional reports started under a previous work assignment on the impacts of vessel activities on aquatic nuisance species in the Great Lakes and approaches for reducing these potential impacts: (1) assessing how Lakers in the Great Lakes are adopting use of ballast water best management practices, (2) the effects of temperature changes on aquatic nuisance species invasion potential, and (3) assessing options to curb the transport of Viral Hemorrhagic Septicemia (VHS) Virus in Laker ballast water.

As directed, the Contractor shall support development of additional reports on the impacts of vessel activities on aquatic nuisance species in the Great Lakes, including approaches for reducing these potential impacts.

As directed, the Contractor shall support development of one or more manuscripts for possible journal publication, including supporting any procedural requirements for publication of such articles.

Task 5: SUPPORT IMPLEMENTATION AND OUTREACH FOR THE VESSEL PERMITTING PROGRAM

Subtask 5a: Outreach

The Contractor shall support the development of materials for implementation and outreach of EPA's vessel permitting program. The Contractor shall prepare technical outreach materials such as 1-2 page factsheets, implementation/compliance checklists, and presentations on permit-specific information, and coordinate/facilitate external stakeholder meetings. The Contractor shall assume development of 2 short implementation fact sheets/checklists. One of those fact sheets may need to be translated into languages of the IMO (French, Spanish, Chinese, Russian, and/or Arabic). The Contractor shall also assume support for 2 online meetings and webinars as requested by the WACOR.

Subtask 5b: Vessel Discharge Summary Report

The Contractor shall develop a report that summarizes the characteristics and conditions of vessels and vessel practices, including those that enter freshwater ecosystems, based on information (i.e., from Notices of Intent, Notices of Termination, Vessel One-Time Reports, and Annual Reports) submitted to EPA under both the 2008 and 2013 VGPs. The report will also analyze vessels and vessel activities based on location, such as to identify the types of vessels operating on the Great Lakes and their operational and discharge characteristics.

DELIVERABLES REQUIRED AND SCHEDULE FOR COMPLETION OF TASKS

| Task | Deliverable | Due Date (to EPA) – unless specified otherwise through written technical direction from the WACOR |
|-------------|-----------------------|--|
| 0 | Work plan and budget | - Per contract requirements |
| 0 | Progress/cost reports | - Monthly (Technical and Cost Progress Report) |

| Task | Deliverable | Due Date (to EPA) – <i>unless specified otherwise through written technical direction from the WACOR</i> |
|-------------|---|--|
| 0 | Response to requests/technical directive | - Within 5 business days unless specified otherwise |
| 0 | Problem report | - Immediately upon discovery of a problem |
| 1 | Great Lakes Accountability/Relevance Report | - 30 days after WACOR request |
| 1 | QAPP | - 10 days after notification by the WACOR that an QAPP is needed |
| 1 | Revisions to QAPP based on EPA feedback | - 7 days after receipt of WACOR feedback |
| 1 | Final QAPP for this WA | - 5 days after WACOR feedback |
| 1 | QA Progress Reports | - Monthly, as part of Progress/Cost Reports |
| 2a | Technical Development Documents | <ul style="list-style-type: none"> - Kickoff meeting with EPA to discuss technical direction within 1 week of receipt of technical direction - Outline of product to be provided within 1 week of kickoff meeting - Draft of product within 1 month of approval of outline - Response to EPA comments on documents within 1 week of receipt of comments - Final deliverable within 2 weeks of receipt of EPA comments |
| 2b | Briefing Materials, Targeted Assessment of Permit Conditions, Technical Memos, Economic and Benefit Analysis, Permit Docket Support, Comment Response Support, etc. | <ul style="list-style-type: none"> - Kickoff meeting with EPA to discuss technical direction within 1 week of receipt of technical direction - Outline of product to be provided within 1 week of kickoff meeting - Draft of product within 1 month of approval of outline - Response to EPA comments on documents within 1 week of receipt of comments - Final deliverable within 2 weeks of receipt of EPA comments |

| Task | Deliverable | Due Date (to EPA) – <i>unless specified otherwise through written technical direction from the WACOR</i> |
|-------------|--|--|
| 3 | Ballast Water Management Technical Development Document | - Draft and final documents based on technical direction from the WACOR |
| 4 | Great Lakes Invasive Species Studies (3) | - Draft outline within 10 days of technical direction from WACOR - Draft report within timeframe specified by WACOR after acceptance of final outline - Report revisions within timeframe specified by WACOR |
| 5a | Online Meeting/Webinar Support | - Registration pages within 1 week after technical direction from WACOR. - Summary reports within 2 weeks after completion of meeting/webinar. |
| 5a | Briefing Materials, Brochures, Fact Sheets, Other Outreach Materials | - Based on technical direction from the WACOR |
| 5b | Draft VGP Summary Report Outline | - Based on technical direction from the WACOR |
| 5b | Revised VGP Summary Report Outline | - 1 week after receipt of comments on Draft Report Outline from WACOR |
| 5b | Draft VGP Summary Report | - 2 months after EPA acceptance of Revised Report Outline |
| 5b | Revised VGP Summary Report | - 2 weeks after receipt of comments from EPA |

CONTRACT PWS REFERENCE

Task 1 – Quality Assurance - PWS Section 4.0

Subtask 2a – Technical Development Documents – PWS Sections 3.8, 5.2, 8.0, and 10.0

Subtask 2b – Permit Revision Support - PWS Sections 3.5, 5.2, 10.0, and 11.0

Task 3 – Ballast Water Management Evaluation – PWS Sections 3.8, 5.2, 8.0 and 10.0

Task 4 – Evaluation Reports – PWS Sections 3.8, 8.0, and 10.0.

Subtask 5a – Outreach - PWS Sections 3.9, 6.0, and 7.0

Subtask 5b – Data Summary Report – PWS Sections 3.8, 8.0, and 10.0

ANTICIPATED TRAVEL REQUIREMENTS

All travel shall be approved in advance by the Contract-Level Contracting Officer's Representative (CL-COR) and shall be in accordance with the Contract.

ADDITIONAL REQUIREMENTS

Upon issuance of written technical direction, the Contractor shall submit for inspection of all work in progress at any time under this work assignment. The Contractor shall develop and maintain files supporting each task.

The Contractor shall contact the Contracting Officer (CO) and/or the CL-CCOR by telephone to discuss any problems that may adversely affect the work on this Work Assignment. Within five (5) calendar days the contractor shall follow the phone call with a brief written explanation of the problem, including any actions already taken, and/or recommended solutions to correct the problem. Written explanation shall be made available to the CO and the PO.

CONTRACTOR IDENTIFICATION

To avoid any perception that contractor personnel are EPA employees, the contractor shall assure that contractor personnel are clearly identified as independent contractors of EPA when attending meetings with outside parties or visiting field sites.

CONTROL REQUIREMENTS

Quality Assurance Project Plan (QAPP):

Publishing on the NPDES website does not require a QAPP, since the people who generate the data are responsible for the data's quality, and it is their responsibility to develop a QAPP, if one is needed for their primary data uses. The contractor shall provide source references for data that is published on the website.

Organizational Conflict of Interest:

The Contractor shall warrant that, to the best of the Contractor's knowledge and belief, there are no relevant facts or circumstances which could give rise to an organizational conflict of interest, as defined in FAR Subpart 9.5, or that the contractor has disclosed all such relevant information. See contract clause 1552.209-71 Organization of Conflict of Interest.

Notification of Conflicts of Interest Regarding Personnel:

The Contractor shall immediately notify the CL-COR and the Contracting Officer of (1) any actual or potential personal conflict of interest regarding any of its employees working on or having access to information regarding this contract, or (2) any such conflicts concerning subcontractor employees or consultants working on or having access to information regarding the contract, when such conflicts have been reported to the Contractor. A personal conflict of interest is defined as a relationship of an employee, subcontractor employee, or consultant with an entity that may impair the objectivity of the employee, subcontractor employee, or consultant in performing the contract work. See Section H.4, contract clause EPAAR 1552.209-73 Notification of Conflict of Interest.

Enforcement Sensitive Information:

The contractor recognizes that contractor employees in performing tasks specified by this WA may have access to data/information, either provided by the government or first generated during contract performance, of enforcement sensitive nature which should not be released to the public without Environmental Protection Agency (EPA) approval. Enforcement sensitive refers to records or information compiled for law enforcement purposes (whether administrative, civil or criminal),

the disclosure of which could reasonably be expected to interfere with the enforcement action. It is imperative that all contractor personnel, including but not limited to, subcontractor and consultant personnel assigned to work on this contract and/or WA, or with access to materials developed pursuant to such efforts, understand that this information is confidential and any disclosure or misuse of the information may result in prosecution to the fullest extent of the law. All contractor personnel are expected to exercise due diligence in safeguarding, handling or disposing of any such information.

Project Employee Confidentiality Agreement

The contractor agrees that the contractor employee will not disclose, either in whole or in part, to any entity external to the EPA, the Department of Justice, or the contractor, any information or data (as defined in FAR Section 27.401) provided by the government or first generated by the contractor under this contract, any site-specific cost information, or any enforcement strategy without first obtaining the written permission of the EPA CL-CPR. If a contractor, through an employee or otherwise, is subpoenaed to testify or produce documents, which could result in such disclosure, the contractor must provide immediate advance notification to the EPA so that the EPA can take action to prevent such disclosure. Such agreements shall be effective for the life and for a period of five (5) years after completion of the contract.

Handling of Confidential Business Information (CBI)

Contractor's access to TSCA CBI must comply with the procedures set forth in the TSCA CBI Security Manual. Likewise, access to FIFRA CBI shall follow the security procedures set forth in the FIFRA Information Security Manual.

To the extent that the work under this contract requires access to proprietary or confidential business or financial data of other companies, and as long as such data remains proprietary or confidential, the contractor shall protect such data from unauthorized use and disclosure.

All files or other information identified as Confidential Business Information (CBI) shall be treated as confidential and kept in a secure area with access limited to only contractor personnel directly involved in the case or special project assignment. The contractor, subcontractor, and consultant personnel are bound by the requirements and sanctions contained in their contracts with the EPA and in EPA's confidentiality regulations found at 40 CFR Part 2, Subpart B. The contractor subcontractors, and consultant must adhere to EPA-approved security plans which describes procedures to protect CBI, and are required to sign non-disclosure agreements before gaining access to CBI.

All official data, findings, and results of investigations and studies completed by the contractor shall be available for EPA and DOJ internal use only. The contractor shall not release any part of such data without the written direction of the WACOR.

Conference/Meeting Guidelines and Limitations

The contractor shall immediately alert the WACOR to any anticipated event under the work assignment which may result in incurring an estimated \$20,000 or more cost, funded by EPA, specific to that event, meeting, training, etc. Those costs would include travel of both prime and consultant personnel, planning and facilitation costs, AV and rental of venue costs, etc. The WACOR will then prepare approval internal paperwork for the event and will advise the contractor when appropriate signatures have been obtained. At that point, effort can proceed for the event. If

the event is being sponsored by another EPA organization, the organization providing the planning is responsible for the approval.

PERFORMANCE SURVEILLANCE PLAN

| Performance Requirement | Measurable Performance Standards | Surveillance Methods | Incentives/Disincentives |
|--|---|--|---|
| Management and Communications: During the life of this work assignment (WA), the Contractor shall notify EPA immediately of any issues that may impact the timeliness of deliverables of the problems associated with the development of deliverables. | The Contractor shall maintain contact with the WACOR throughout the performance of the WA. The contractor shall identify to the WACOR any delays regarding deliverables not less than one week prior to the deliverable date that has been established in the WA or technical direction document. The contractor shall identify to the WACOR any issues or concerns that have a direct impact on project schedules within three (3) days of occurrence. The contractor shall provide options for EPA's consideration on resolving or mitigating the impacts identified. | WACOR and CL-COR (as necessary) will allocate the time needed to discuss and address all issues identified by the Contractor. The WACOR and CL-COR will document and maintain a complete record of the issues, agreements and outcome. The WACOR and CL-COR will review monthly progress reports for indicators of problems not previously mentioned. The WACOR will also monitor the timely receipt of deliverables. For those that are late without prior notice, the EPA will formally document to the Contracting Officer the late delivery. | If the contractor fails to implement corrective actions after EPA identifies and provided written documentation of performance issues, EPA will rate this performance category "unsatisfactory." If three or more the active WAs for the period are rated unsatisfactory, EPA will rate the Business Relations category as unsatisfactory in the CPARS Contract Performance System. |
| Cost Management and Control: The Contractor shall perform all work in an efficient and cost effective manner, applying cost control measures where practical. | The Contractor shall monitor, track and accurately report level of effort, labor cost, other direct cost and fee expenditures to EPA through monthly progress reports and approved special reporting requirements. The Contractor shall assign appropriately leveled and skilled personnel to all tasks. The contractor should not exceed established WA ceilings and, in general, should expend dollars and hours at similar ratios. If either the expenditure of hours or dollars deviates significantly, the contractor shall provide an explanation in its Monthly Progress Report. | The CL-COR will routinely meet with the Contractor's Project Manager to discuss the work progress and contract and individual WA level expenditures. The CL-COR and WACOR shall review the Contractor's monthly progress reports and request the WACOR to ensure that ceilings are not exceeded, that progress is being made, and that the contractor is effectively using the LOE provided under the WA. | EPA will thoroughly review WA funding ceiling overruns to determine the contractor's ability to control the situation. If EPA determines that the contractor failed to control cost, the contractor will be rated "unsatisfactory" in this category. Multiple incidents of WA overrun that result in an overall cost overrun of greater than 4% of the approved total WA funding for the current contract period, will result in an unsatisfactory rating in the CPARS Contract Performance System. |
| Quality of Product/Services: The contractor shall ensure documents developed under this task order are quality products that are factual and based on sound science and engineering principles. | Products delivered under this WA must not contain any major factual errors. The analyses provided in each product shall be logical, consistent, and defensible. | The WACOR will review all documents delivered under this WA for content accuracy. | If EPA determines that the contractor's analyses is factually inaccurate or if significant technical errors are found in any documents produced by the contractor, EPA may determine that the cost associated with redoing the work shall be borne by the contractor. Multiple incidents of this nature under the contract will result in an unsatisfactory rating for Quality and Manage Control being reported to the CPARS Contract Performance System. |

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| EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment | | Work Assignment Number 2-35 | | | | | | | | |
| | | <input type="checkbox"/> Other <input type="checkbox"/> Amendment Number: | | | | | | | | |
| Contract Number EP-C-16-003 | Contract Period 07/01/2016 To 06/30/2021 Base Option Period Number 2 | Title of Work Assignment/SF Site Name Completion of Phase 2 Mystic | | | | | | | | |
| Contractor EASTERN RESEARCH GROUP, INC. | | Specify Section and paragraph of Contract SOW See PWS | | | | | | | | |
| Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval | | Period of Performance From 07/01/2018 To 06/30/2019 | | | | | | | | |
| Comments: | | | | | | | | | | |
| <input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund | | | | | | | | | | |
| SFO <input type="checkbox"/> (Max 2) Note: To report additional accounting and appropriations date use EPA Form 1900-69A. | | | | | | | | | | |
| Line | DCN (Max 6) | Budget/FY (Max 4) | Appropriation Code (Max 6) | Budget Org/Code (Max 7) | Program Element (Max 9) | Object Class (Max 4) | Amount (Dollars) | (Cents) | Site/Project (Max 8) | Cost Org/Code |
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| Authorized Work Assignment Ceiling | | | | | | | | | | |
| Contract Period: | | Cost/Fee: | | LOE: | | | | | | |
| 07/01/2016 To 06/30/2021 | | | | | | | | | | |
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| Work Plan / Cost Estimate Approvals | | | | | | | | | | |
| Contractor WP Dated: | | | | Cost/Fee | | | | LOE: | | |
| Cumulative Approved: | | | | Cost/Fee | | | | LOE: | | |
| Work Assignment Manager Name Mark Voorhees | | | | | | | Branch/Mail Code: | | | |
| _____ (Signature) | | | | | | | _____ (Date) | | | |
| Project Officer Name Robin Danesi | | | | | | | Phone Number: 617-918-1537 | | | |
| _____ (Signature) | | | | | | | _____ (Date) | | | |
| Other Agency Official Name Ray Cody | | | | | | | FAX Number: | | | |
| _____ (Signature) | | | | | | | _____ (Date) | | | |
| Contracting Official Name Brad Heath | | | | | | | Branch/Mail Code: | | | |
| _____ (Signature) | | | | | | | 7/1/2018 (Date) | | | |
| | | | | | | | Phone Number: 513-487-2352 | | | |
| | | | | | | | FAX Number: | | | |

**PERFORMANCE WORK STATEMENT
CONTRACT EP-C-16-003
WORK ASSIGNMENT 2-35**

TITLE: Completion of Phase 2: Mystic River Watershed Eutrophication Analysis & Phase 3: Cooperative Watershed Management Support

WORK ASSIGNMENT CONTRACTING OFFICER'S REPRESENTATIVE (WACOR):

Mark Voorhees
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Mail Code: OEP 06-4
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**ALTERNATE WORK ASSIGNMENT CONTRACTING OFFICER'S
REPRESENTATIVE (AWACOR):**

Ray Cody
US Environmental Protection Agency, Region 1
5 Post Office Square, Suite 100
Boston, Massachusetts
Mail Code: OEP 06-1
Phone: 617-918-1366
cody.ray@epa.gov

PERIOD OF PERFORMANCE: July 1, 2018 through June 30, 2019

ESTIMATED LEVEL OF EFFORT: 1,000 hours

BACKGROUND: During 2016 and 2017, EPA issued work assignments to Environmental Research Group (ERG), WA 1-35 under Contract EP-C-16-003 and WA 4-61 under Contract EP-C-012-021, to support EPA Region 1 in carrying out Phases 1 and 2 of the Mystic River Watershed Eutrophication Analysis. The focus of these earlier phases was to support EPA Region 1 by developing analytical tools to estimate phosphorus load reductions that are needed from the Mystic River watershed to attain applicable Massachusetts surface water quality standards (MA SWQS) related to cultural eutrophication. An additional objective of the Phase 2 work was to conduct a demonstration stormwater (SW) management optimization analysis using EPA Region 1's Opti-Tool. The Opti-Tool management analysis is intended to demonstrate the value of analyzing existing available watershed information to identify the most cost-effective SW control measures (SCMs) and develop low-cost SW management strategies for achieving phosphorus reductions and addressing other watershed water resource issues faced by communities. Throughout Phase 1 and 2, EPA Region 1 and the ERG team has collaborated

with project partners, the Massachusetts Department of Environmental Protection (MassDEP), the Mystic River Watershed Association (MyRWA) and the Massachusetts Water Resource Authority (MWRA).

Phase 2 project work was scheduled to be completed in by July 2018. However, due to additional time needed to collect and compile essential data for the Mystic River watershed and water quality modelling analyses, certain Phase 2 deliverables associated with Tasks 6, 7, 8 and 9 of WA 1-35 have been delayed and will now be accomplished as specified under WA 2-35. The Phase 2 work to be completed under this WA includes:

- 1) Finalizing the Mystic River watershed phosphorus load reduction estimates needed for attaining MA SWQS at three critical waterbody locations along the Mystic River;
- 2) Finalizing the Opti-Tool SW management optimization analyses;
- 3) Completing an expert review of the project's technical analyses; and
- 4) Preparing a final project report for Phases 1 and 2.

Deliverables from these remaining Phase 2 tasks along with other work previously completed during Phases 1 and 2 will provide much of the foundational groundwork for the next phase of work, henceforth referred to as Phase 3, that shall be carried out under WA 2-35. Phase 3 work shall begin the process of working with watershed communities to collaboratively and effectively address watershed management implementation needs and develop technical support information to help advance immediate implementation of wise watershed management activities in the Mystic River watershed and beyond.

As with previous work conducted under Phases 1 and 2, work under this WA is intended to support elements of EPA's TMDL Vision process by providing technical support for watershed restoration efforts in the Mystic River watershed. This project provides an opportunity to target multiple TMDL Vision Goals: developing an "Alternative" to a TMDL, "Engaging" with the state, the watershed group and communities, and "Integrating" a plan to address multiple Clean Water Act programs, such as point and non-point water pollution, and other EPA programs such as Superfund and Environmental Justice.

The Mystic River watershed is a 76-square mile watershed located in the Greater Boston, Massachusetts area that encompasses all of or portions of 22 urban and suburban communities. The watershed has numerous water resource issues related to uncontrolled stormwater runoff from developed landscapes. Extensive areas of impervious cover and development in the watershed are primary causes of water quality impairments, flooding and excessive low flow conditions during droughts. The freshwater portion of the watershed faces multiple water quality impacts related to cultural eutrophication including excessive algal growth, harmful cyanobacteria blooms and excessive native and invasive macrophyte growth. Sources of nutrients from the watershed include stormwater runoff, illicit sewer connections, Combined Sewer Overflows (CSO's), Sanitary Sewer Overflows (SSO's), erosion and non-point runoff. Stormwater runoff from watershed impervious surfaces is the dominant source of nutrient loading from the watershed. Several environmental justice communities are located within the watershed and there is high development pressure throughout the entire watershed.

The Mystic River Watershed was designated as an Urban Waters Partnership Location in 2013. The Partnership works to improve coordination and focus among federal agencies on problems in the watershed. The focus of efforts in the Mystic River Watershed include: urban water restoration and monitoring, water quality awareness, scientific research, and environmental education. The partners are USGS, US Forest Service, USACOE, National Park Service, HUD, and FEMA. Work under this WA may have the potential for future collaboration.

This work assignment will support the following key areas of focus for EPA: urban stormwater, environmental justice, nutrients, and elements of the TMDL Vision process.

PURPOSE AND OBJECTIVE:

The purpose of this WA is twofold: 1) To finalize certain Phase 2 technical analyses that have been delayed due to the need for additional time to obtain essential data for completing the analyses; and 2) To build on the analytical work of Phases 1 and 2 and conduct Phase 3, a cooperative watershed management support phase, that will involve project partners and willing municipalities in a collaborative process of sharing valuable information to facilitate implementation activities by the watershed communities.

As indicated above, the remaining Phase 2 work to be completed under this WA includes finalizing estimates of the Mystic River watershed phosphorus load reductions that are needed to reduce the frequency and severity of algal blooms and eventually attain applicable MA SWQS. Also, this WA shall finalize the Phase 2 SW management optimization analysis that pioneers a cutting-edge approach for developing highly effective and affordable SW management strategies for addressing numerous water resource issues including reducing SW phosphorus loads, while remaining sensitive to site specific limitations to conventionally modeled and credited strategies. The SW management analysis will also identify “every-day-counts” opportunities that municipalities routinely experience so that communities can consider immediate action and begin the long-term process of implementing controls and making progress towards achieving multiple water resource goals.

The Phase 3 project team consisting of regulators, responsible and ready to act municipal parties and academic researchers have recognized that significantly more communication and technical support and adaptive strategies are necessary. Thus, Phase 3 of this project is intended to effectively engage and create an on-going dialogue with all relevant stakeholders to: 1) Share cutting edge SW management information for developing affordable and effective SW management and retrofit programs; and 2) Increase awareness of the real-world concerns and realities that municipalities face when considering such programs; and 3) co-produce solutions that are more effective, efficient and economically affordable.

During the past decade, EPA Region 1 has developed considerable SW management information and tools (e.g., SW control cumulative performance curves and Opti-Tool) that are designed to address the technical challenges and affordability of managing SW runoff from impervious surfaces, which is commonly perceived as being too difficult and/or unaffordable. The information developed and provided in these tools substantially expands the universe of opportunities for effectively managing SW runoff from developed landscapes by providing

credible estimates of cumulative pollutant reduction effectiveness for a wide-range of SW technologies with varying design capacities (small to large). Small capacity systems are more technically feasible and affordable to retrofit into existing development. More importantly, many of the green infrastructure technologies are highly effective (even small sized systems).

EPA Region 1 recognizes that modern SW related water resource issues are complex and require adaptable and flexible management approaches that make use of the best available information including the cumulative performance information referred to above. Moreover, EPA Region 1 has learned that having this information available (at this time) on an EPA website does not likely provide the necessary context for how such critical information can be applied by SW managers to substantially expand the universe of potential and affordable management opportunities for meeting challenging water quality objectives. Clear concise communication strategies and tailored technical support materials are essential if the Region and other regulators are to provide the needed technical support to municipalities charged with addressing SW related water resource issues.

In summary, during Phase 3, the project Team (EPA Region 1, the contractor and other project partners) shall work with ready to adopt municipal officials in 3-6 MS4 permit communities within the Mystic River Watershed to collaboratively develop effective strategic approaches, communication products and technical support to effectively advance restoration efforts and inform municipal governments on:

- 1) Watershed stormwater (SW) management needs for addressing existing water resource impacts caused by uncontrolled stormwater (SW) runoff;
- 2) Opportunities for readily implementing efficient SW control retrofits and “every-day-counts” improvements in municipal stormwater operations and planning;
- 3) Quantifiable improvements for beginning long-term SW control retrofit programs that will address multiple issues related to increased peak flows, runoff volumes, water quality and health and safety issues related to urban drainage.; and
- 4) Approaches for developing long-term comprehensive and affordable SW management strategies for achieving water resource goals.

Through a series of working meetings, the Project Team will collaborate to develop streamlined informational materials designed to effectively communicate important scientific and technical information needed by communities to develop technically sound and affordable SW management programs. This will be accompanied by pragmatic point of use approaches from infrastructure owners and personnel (e.g., Department of Public Works (DPW)) that have the authority and responsibility to act. Together the information generated will help facilitate local ownership of SW related issues and infrastructure and transferability for use in other developed watersheds throughout New England where municipalities face similar water resource management challenges.

During Phase 3, the Project Team will share experiential information and data on cutting edge SW management approaches that focus on developing co-production of solutions and communication strategies that meet both regulatory and practitioner needs. Throughout this experiential approach, information also will be collected to develop a scope of work for a

potential next phase (e.g., Phase 4) that will include comprehensive end user input and focus on developing similar supporting scientific, technical and quality of life information deliverables designed to inform next to adopt communities and the general public.

This project has been developed on the shoulders of a decade and a half of experience and implementation efforts in New England including regulators, practitioners and academic researchers and is founded in the development of local implementation champions that adapt approaches to fit local municipal management cultures. This strategic approach starts and ends with the essentials of a sustainable stormwater management program, good regulations and custom GI approaches that can be easily implemented and maintained.

The Agency requires technical expertise to support the following project, which is designed to accomplish these goals and objectives in the New England States.

SCOPE OF WORK

Task 0 - Project Management

A) Develop Work Plan: The Contractor shall prepare a Work Plan for EPA's approval. The Work Plan shall describe how the Contractor shall accomplish each of the tasks. The Contractor shall provide qualified staff to perform the work and a Project Manager to oversee all project activities.

B) Project Coordination: The Contractor will work closely with the EPA WACOR and the existing Technical Steering Committee (TSC). The Contractor will consult the WACOR for major technical decisions, especially during completion of the Phase 2 tasks and the Phase 3 project meetings. It will be the responsibility of the WACOR to provide the contractor input on behalf of the TSC in a timely manner consistent with the deliverable due dates.

C) Reporting: The contractor shall provide electronic copies of the monthly progress reports to the WACOR and CL-COR. Each progress report shall describe the technical work and expenditures for the same time period as the corresponding invoice. The reports shall list by task the amount of work completed and include a table of hours by personnel for each task. The reports also shall identify any problems or difficulties.

Deliverables:

- A) The Contractor shall submit a Work Plan in accordance with contract requirements **after the date of issuance of WA 2-35.**
- B) The Contractor shall maintain communication with the EPA WACOR and shall host monthly conference calls throughout the project.
- C) The Contractor shall submit monthly progress reports in accordance with contract requirements.

Task 1 – Adherence to Project Quality Assurance Project Plan

During WA 1-35, ERG finalized the Quality Assurance Project Plan (QAPP) entitled *Quality Assurance Project Plan for Phase 2 Mystic River Watershed Eutrophication Analysis*. This QAPP was approved by the EPA Region Quality Assurance Office on January 21, 2018 and will continue to be in effect for all task work conducted under WA 2-35. The Contractor shall continue to adhere to the existing project QAPP for all Phase 2 and 3 work as specified in WA 2-35. It is expected that some of the Phase 3 work shall involve assembling, reviewing and using existing environmental information as part of providing technical support.

Deliverables:

The Contractor shall document adherence to the project QAPP in all remaining Phase 2 Technical Deliverables in accordance with the deliverable schedule for each Phase 2 task (as specified below) and shall follow the QAPP in carrying out Phase 3 tasks.

Task 2: Participate in Project Technical Steering Committee

The Contractor shall participate on the Mystic River Eutrophication Technical Steering Committee (TSC) that was convened during Phase 1 and active during Phase 2. TSC meetings will continue to be held during the remainder of Phase 2 and during Phase 3 of the project. The TSC meetings shall continue to provide a forum for key project stakeholders to review and discuss progress at regular intervals, share expertise and insights and deliberate interim project decision points. The Contractor's participation in the TSC shall have the following primary two functions:

- 1) Provide technical expert advice/guidance on watershed phosphorus loading and water quality modelling and watershed stormwater management opportunities; and
- 2) Facilitate and participate in TSC meetings to present project progress/findings and important underlying information needed to support a well-informed decision making process during the project.

Deliverables:

The Contractor shall attend up to three TSC meetings for the remainder Phase 2 and Phase 3 of the project. The Contractor shall present project progress and provide the necessary technical expertise to achieve the TSCs meeting objectives that will be discussed beforehand with the WACOR. It can be assumed that the TSC meetings would be approximately every three months starting in October 2018 and ending in June 2019.

Task 3 - Develop and Calibrate Bathtub Models for the Mystic River Watershed

The Contractor shall finalize development and calibration of Bathtub models for the three critical waterbody segments in the Mystic River system: 1) Lower Basin; 2) Upper lobe of Upper Mystic Lake; and 3) Main body of the Upper Mystic Lake. The models have been applied at these locations at appropriate spatial scales for determining annual phosphorus loading capacities and reductions in annual watershed phosphorus loadings that are needed to attain eutrophication related MA SWQS.

Significant progress was made in developing and calibrating the Bathtub models during the previous WA 1-35 under Task 4.

The Contractor shall prepare a technical memorandum that describes the modelling approaches and presents results of the calibration process including an assessment of the calibration results for each of the Bathtub models. The memorandum should provide sufficient detail to allow an independent reviewer to evaluate the modelling approaches and results of the calibration process.

Deliverables:

The Contractor shall submit to the WACOR a draft technical memorandum that describes the modelling approaches and results of the calibration process for each of the Bathtub models **by July 13, 2017**. The contractor shall address comments received on the draft technical memorandum and submit a final technical memorandum **within 15 days of receiving comments from the WACOR**.

Task 4 – Conduct Watershed Phosphorus Load Reduction Analysis

The Contractor shall use the calibrated watershed loading and receiving water Bathtub models developed under Tasks 3 and 4 of WA 1-35 and Task 3 (above) to estimate watershed based annual phosphorus load reductions that are needed to attain eutrophication-related MA SWQS in three critical waterbody segments: 1) Lower Basin; 2) Upper lobe of Upper Mystic Lake; and 3) Main body of Upper Mystic Lake. The Contractor shall use the nutrient related water quality endpoints selected during Phase 1 of the project (e.g., seasonal average chlorophyll *a*, total phosphorus concentrations and percent macrophyte coverage) to conduct the analyses. This work shall be comprised of the following subtasks:

A: Identify Critical Period of Interest for Phosphorus Load Reduction Analysis: The critical period of interest will be the climatic period for which the Mystic River watershed phosphorus load reduction analysis shall be conducted. This period should be representative of critical climatic conditions related to the water quality endpoints selected for this project and that are likely to lead to excessive algal growth and cyanobacteria blooms in the Mystic River system. A multiple year period (e.g., 5 years) may be needed to capture varying critical conditions that could lead critical eutrophication-related conditions in the Mystic River system. The contractor shall finalize evaluating climatic conditions in the Mystic River watershed (year 2000 to present) (begun under WA1-35) and recommend to the WACOR in a brief technical memorandum a critical period of interest to be used for the phosphorus load reduction analysis for the Mystic River watershed.

B: Develop Watershed Phosphorus Loading Estimates for Critical Period of Interest: Upon approval of the critical period of interest from the WACOR, the Contractor shall apply the calibrated watershed phosphorus loading models developed under Task 3 to estimate annual phosphorus loads and flows delivered to the three critical Mystic River waterbody segments for which Bathtub models have been developed under Task 4. Should the critical period of interest differ from the period of time represented in the calibration process then it may be necessary for the Contractor to recalculate HRU annual phosphorus load rates using Opti-Tool and the annual

phosphorus load captured for each of the seven major lakes/ponds. Phosphorus loads and flow volumes from the watershed models shall be used as inputs to Bathtub models.

The Contractor shall develop annual phosphorus load delivery estimates for each sub-basin, the three critical Mystic River waterbody segments and each of the seven major lakes and ponds for the critical period of interest. The estimates shall be provided in the spreadsheet models that provide all watershed factors used to calculate loads and represent watershed routing and/or attenuation. The final phosphorus load estimates for the seven major lakes/ponds shall also include the estimated annual phosphorus load captured by each lake/pond for the critical period of interest.

C: Apply Bathtub Models to Estimate Watershed Phosphorus Load Reductions: The Contractor shall apply the calibrated Bathtub models for the critical period of interest to determine the allowable phosphorus loading capacities of the three critical Mystic River waterbody segments using the nutrient related water quality endpoints selected during Phase 1 of the project. The Bathtub models shall also be used to estimate the corresponding average annual phosphorus load reductions that are needed from the contributing watershed areas to attain eutrophication-related MA SWQS using the selected endpoints. The Contractor shall prepare a technical memorandum that describes and presents the results of the phosphorus load reduction analysis.

Deliverables:

- A) The Contractor shall submit to the WACOR a technical memorandum summarizing the results of climate/water quality analysis and a recommendation for the critical period of interest to be used in the phosphorus load reduction analysis **by July 13, 2018.**
- B) The Contractor shall submit to the WACOR all final Opti-Tool input files and spreadsheet models (compatible with Excel) for all sub-basins, the three critical Mystic River waterbody segments and the seven major lakes/ponds for the critical period of interest **by July 13, 2018.**
- C) The Contractor shall submit to the WACOR a draft technical memorandum that describes and presents the results of the phosphorus load reduction analysis **by July 20, 2018.**

Task 5 – Develop Broad-Based Nutrient Stormwater Management Strategies for Mystic River Watershed using Opti-Tool

The Contractor shall finalize work begun under WA 1-35 (previously Task 6) on applying Opti-tool to a selected subwatershed within the Mystic River Watershed to demonstrate the process of developing broad-based stormwater management strategies that identify the most cost effective management opportunities for achieving a wide range of nutrient load reductions including the load reductions that will be needed to attain MA SWQS. EPA Region 1's primary goal for this task is to demonstrate to watershed communities the value of conducting a comprehensive evaluations using readily available data and information to develop management strategies that identify a range of stormwater management opportunities that exist within the watershed. EPA Region 1 and project partners hope to increase awareness among watershed communities that many such opportunities can be affordably realized and readily implemented through future redevelopment and urban renewal projects.

The Contractor shall use the results of the geographic watershed spatial data analyses and corresponding stormwater management categories conducted under Phase 1 to broadly apply Opti-Tool to the pilot Mystic River subwatershed selected under Phase 2 for the critical period of interest. EPA expects that Opti-Tool analysis results will help to further identify optimal stormwater control (SWC) categories and sizing approaches that could increase both the technical and economic feasibilities of retrofitting needed SWCs into developed watershed areas. The Contractor shall develop a draft technical memorandum describing the Opti-Tool analysis, its results and include recommendations on broad-based stormwater management opportunities that watershed communities can begin to consider. The contractor shall provide an accounting of the stormwater management categories and corresponding watershed features by municipality for all sub-basins, the three critical Mystic River waterbody segments and the seven major lakes/ponds sub-basins in spreadsheets.

Deliverables: The Contractor shall submit to the WACOR a draft technical memorandum on the Opti-Tool analysis **by August 20, 2018** and a final technical memorandum of the Mystic River watershed Opti-Tool analysis **within 15 days of receiving comments from the WACOR.**

The Contractor shall submit to the WACOR all final Opti-Tool input files used in the Task 5 analysis and spreadsheets (compatible with Excel) that provide an accounting of stormwater management categories and corresponding watershed features by municipality for each sub-basin, the three critical Mystic River waterbody segments and the seven major lakes/ponds for the critical period of interest **by September 20, 2018.**

Task 6 – Phase 2 Independent Technical Reviews

The Contractor shall select two experts in the fields of nutrient modelling and urban stormwater management retrofits to conduct an independent expert review of the nutrient modelling efforts, nutrient and eutrophication response variable endpoints, and SW management analyses that will be completed for this project. The goal of this review is to:

- 1) Provide an independent assessment of the work that has been completed and to provide constructive feedback to EPA, the TSC and the Contractor's project team and for using the project results to support future management decisions;
- 2) Make recommendations on any future improvements to the modelling work and nutrient and eutrophication response variable endpoints; and
- 3) Make recommendations on approaches for informing communities on developing adopting SW management implementation strategies to assist MyRWA and Mystic River watershed communities as they work to reduce nutrient loading in the watershed.

The two independent reviewers shall prepare final summaries of their reviews and include an overall evaluation of the modelling tools for supporting nutrient management actions in the Mystic River watershed. The Contractor shall invite the independent technical reviewers to present their findings at the final project TSC meeting.

Deliverables:

The Contractor shall submit to the WACOR the written summaries of the reviews conducted by the independent technical reviewers of the Mystic River nutrient modelling as a foundation for supporting future SW management decisions **by September 15, 2018** and the reviewers shall present their findings **at the final Phase 2 project TSC meeting** (date not yet determined).

Task 7 – Phase 2 Public Outreach Meeting

The Contractor shall attend and lead a public outreach meeting for Mystic River watershed communities and stakeholders. The goal of this public meeting will be to share the results of this project and make recommendations on what the communities and stakeholders can do to implement the nutrient reduction recommendations resulting from this project. The Contractor shall structure the meeting to include time for a presentation on the project background, results and future implementation recommendations, as well as adequate time for public comment and questions and answers. The Contractor shall not be responsible for arranging the logistics (e.g., meeting place) for the meeting.

Deliverables:

The Contractor shall attend and lead a public outreach meeting for the Mystic River watershed by **October 30, 2018**.

Task 8 - Final Phase 1 and 2 Report

The Contractor will prepare a final report that summarizes the background, results and recommendations from this project. EPA envisions that much of the written materials provided for the various Phase 1 and 2 project Task technical memorandums can be readily incorporated into the final report. The Contractor shall also provide in the main body of the final report, or as appendices to the final report, or as electronic files (in an EPA compatible format) the following information: Data used for nutrient and eutrophication response variable endpoints; Data used for modeling; Model calibration inputs; Model results; Model spreadsheets; Geographic Information System (GIS) shapefiles and raster files and GIS analyses.

Deliverables:

The Contractor shall submit to the WACOR: 1) A draft final report for the Mystic River Watershed Eutrophication Analysis **by September 15, 2018**; and 2) A final Report **within 15 days of receiving comments from the WACOR but no later than November 30, 2018**.

Task 9 – Phase 3: Participation in Cooperative Watershed Management Technical Support Process with Pilot Municipalities Within the Mystic River Watershed

The Contractor shall participate with the Phase 3 Project Team to be convened by EPA Region 1. The Phase 3 Project Team will be made up of representatives of EPA Region 1, the project partners, the Contractor and municipal officials from pilot communities to be determined. The

Contractor through participation in the Phase 3 Project Team shall assist EPA Region 1 in working with municipal officials in 3 to 6 pilot MS4 permit communities (MS4s) within the Mystic River Watershed to develop technical support information and materials that will be meaningful and useful to MS4s. EPA envisions a sustained collaborative process of working with the pilot municipalities to share information and points of view in order to develop realistic and effective strategic stormwater management approaches, communication products and technical support designed to effectively advance watershed restoration efforts.

The Contractor shall assist EPA Region 1 and provide technical support to help inform municipal governments on:

- 1) Watershed stormwater (SW) management needs for addressing existing water resource impacts caused by uncontrolled stormwater (SW) runoff;
- 2) Opportunities for readily implementing efficient SW control retrofits and “every-day-counts” improvements in municipal stormwater operations and planning;
- 3) Quantifiable improvements for beginning long-term SW control retrofit programs that will address multiple issues related to increased peak flows, runoff volumes, water quality and health and safety issues related to urban drainage.; and
- 4) Approaches for developing long-term comprehensive and affordable SW management strategies for achieving water resource goals.

The Contractor shall participate with the Phase 3 project Team in a series of working meetings with the ultimate goal of developing streamlined informational materials designed to effectively communicate important scientific and technical information needed by communities to develop technically sound and affordable SW management programs. This collaborative process shall actively engage MS4s on developing pragmatic point of use approaches as infrastructure owners (i.e., MS4s) and personnel on the ground (e.g., Department of Public Works (DPW)) that have the authority and responsibility to act. Together the information generated will help facilitate local ownership of SW related issues and infrastructure and transferability for use in other developed watersheds throughout New England where municipalities face similar water resource management challenges.

This work shall be comprised of the following subtasks:

WORK ASSIGNMENT CONTRACTING OFFICER’S REPRESENTATIVE (WACOR):

A) Support for Development of Phase 3 Approach for Collaborative Municipal Technical

Support: EPA Region shall work with project partners with support from with other EPA contractors, Consensus Building Institute (CBI), and University of New Hampshire Stormwater Center (UNHSC) to develop a detailed scope of work designed to successfully carry out and achieve Phase 3’s objectives as outlined above. The Contractor shall participate in the process of developing the scope of work by providing input on process design with consideration of the appropriate level of effort based on available resources. Work under this task will likely involve participation in 2 conference calls, attendance at a ½ day meeting in Boston, and providing comments on a written draft of the scope to be provided to the Contractor by the WACOR.

B) Assistance in Identifying Pilot Municipalities to Participate in Phase 3: EPA Region 1 plans to identify 3 to 6 volunteer MS4 municipalities (Pilot MS4s) that represent ready to act municipal partners that are currently dedicated to SW related activities. Ideally, the selected Pilot MS4s will represent a range of complexities in MS4 systems and potential SW management opportunities (e.g., low, medium, high) in order to increase the applicability of the results of this project for transfer to other MS4s. EPA intends to select Pilot MS4s that have interest in technical information relating to restoring hydrologic balance and improving water quality in the Mystic River watershed through SW management programs. Also, the Pilot MS4s shall make technical staff available to collaborate towards mutually beneficial water quality end products. The participating municipal officials should have a willingness to provide input/feedback on developing effective communication strategies and technical support materials that would be useful to municipal officials in communities similar to their own.

The Contractor shall provide assistance to EPA Region 1 during the process of selecting Pilot communities. Specifically, the Contractor shall assist EPA Region 1 in evaluating potential Pilot MS4s for participation in Phase 3. This assistance may include compiling readily available information about candidate municipalities (e.g., population served, SW related asset summary, municipal government structure and department responsibilities) including watershed information developed during Phases 1 and 2 of this project.

C) Participation in Phase 3 Project Team Working Meetings: The Contractor shall participate and collaborate with the Phase 3 Project Team in up to 6 facilitated working meetings over the course of a year. Further scoping of these meetings shall be accomplished under Task 9 Subtask A. EPA recognizes that refinements may be needed (e.g., have sub-group meetings) if it is determined that informational and technical support needs between MS4s with low medium and high complexities are significantly different. However, EPA Region1 considers that much of the general information sharing and discussion of technical support needs can be accomplished during meetings with all participating MS4s.

Working meetings shall be facilitated to encourage open dialogue and build productive trusting synergies among all members of the project team and to assist in making progress towards accomplishing the project objectives. EPA's contractor CBI shall arrange, schedule and facilitate the working meetings and also compile meeting notes for the project team. Key topics to be covered at the working meetings shall include:

1. Overview of water resource objectives from the perspectives of the various members of the project team;
2. Sharing of critical SW management information related to developing effective and affordable SW management and retrofit programs. This information shall include:
 - Region 1 cumulative performance curves for various SW control technologies;
 - Real world examples and quantified benefits of small design capacity SW control retrofits in urban areas that are suitable for the Mystic;

- Streamlined approaches for evaluating community watershed characteristics and developing long-term SW management strategies that will help communicate and prioritize future water resource management projects; and
 - Evaluate more protective local ordinances that could accomplish needed SW management activities through redevelopment and urban renewal projects. Quantify potential environmental benefits and cost savings to municipalities that could be gained through adopting more protective ordinances.
3. Identify existing and likely future constraints for implementing SW management retrofit programs and develop solutions and approaches to help overcome constraints; and
 4. Develop effective communication strategies between regulatory agencies and municipalities for sharing key information related to successful SW management programs. This shall include the design of streamlined technical support and information materials to better support municipalities in carrying out SW management programs for achieving water resource goals in the most practical and cost-effective manner; and
 5. Identifying and prioritizing additional technical support and informational needs going forward.

The Contractor shall prepare for and participate in the working meetings to provide technical support in the form of providing input on meeting agendas, sharing information through presentations and providing brief written materials as needed to advance discussions. The Contractor shall conduct research and compile relevant information in preparation for the meetings.

D) Streamlined Technical Support Materials: The Contractor shall prepare streamlined technical support and information materials to better support municipalities in carrying out SW management programs for achieving water resource goals in the most practical and cost-effective manner. EPA envisions that the Contractor shall prepare 4 separate succinct technical support documents (e.g., 2-4 pages) covering varying SW management technical topics. The topics of each document shall to be determined during the course of the process and shall be specified to the Contractor by the WACOR. Draft documents and materials shall be shared with the Phase 3 project team and shall be revised based on feedback gained during the working meetings and on comments from the WACOR.

E) Prepare Final Phase 3 Report: The Contractor shall prepare a Phase 3 report that summarizes project findings and recommendations for effective communication and technical support strategies for effective SW management with municipalities within the Mystic River watershed and beyond. The Contractor shall prepare a draft Table of Contents for the report for review by the WACOR and Phase 3 Project Team prior to preparing the report.

Deliverables:

- A) The Contractor shall support development of the scope of work for the Phase 3 collaborative technical support process by participating in conference calls, attending a ½ day meeting and providing written comments on drafts to WACOR. EPA expects the process to finalize a scope of work shall conclude **by October 15, 2018**.
- B) The Contractor shall support the WACOR during the selection process of the Pilot MS4. The contractor shall provide summaries of readily available information about the candidate municipalities and associated watershed characteristics. For the purpose of estimating level of effort, the Contractor should assume 10 MS4s. The Contractor shall also provide input and recommendations to the WACOR on which candidate MS4s are most well suited to participate and support achieving Phase 3 objectives. EPA expects the process to finalize selection of the Pilot MS4 shall conclude **by October 15, 2018**.
- C) The Contractor shall prepare for and participate in up to 6 working meetings to provide technical support in the form of providing input on meeting agendas, sharing information through presentations/discussion and providing brief written materials as needed to advance discussions and as directed by the WACOR. EPA estimates that this process shall be carried out between **November 2018 to May 2019**.
- D) The Contractor shall submit to the WACOR up to four draft technical support documents (e.g., 2-4 pages) covering SW management technical topics as directed by the WACOR. EPA expects that scope of the documents will be determined through the collaborative meeting process. Therefore, the Contractor and WACOR shall coordinate to develop a schedule for developing and submitting the draft documents to the WACOR during the process. EPA envisions that drafts will be distributed in advance of specific working meetings to be determined. The Contractor shall submit to the WACOR final technical support documents **within 15 days of receiving comments from the WACOR but no later than June 30, 2019**.
- E) The Contractor shall submit to the WACOR: 1) A draft Table of Contents for the Phase 3 Report by **April 1, 2019**; 2) A draft Phase 3 report **by June 1, 2019**; and 3) A final Phase 3 Report **by June 30, 2019**.

DELIVERABLES REQUIRED AND SCHEDULE FOR COMPLETION OF TASKS

| Task | Item Required | Due Date | Number of Copies and Format Requirements |
|----------|--|--|--|
| 0 | A) Work Plan B) Monthly conference calls C) Monthly progress reports | A) In accordance with contract requirements B) Every Month C) In accordance with contract requirements | A) 1 in electronic format B) Conference calls |

| | | | |
|----------|---|---|--|
| | | | C) 1 in electronic format |
| 1 | A) Document Adherence to Quality Assurance Project Plan in all Deliverables | A) As specified by Task deliverable due date | 1 in electronic format |
| 2 | Attend TSC Meetings | Between September 1, 2018 and June 30, 2019 | In -person meeting |
| 3 | A) Draft Bathtub Modelling Technical Memorandum B) Final Bathtub Modelling Technical Memorandum | A) July 13, 2018 B) Within 15 days of receiving comments from WACOR | A) 1 in electronic format B) 1 in electronic format |
| 4 | A) Technical Memorandum on Critical Period Analysis B) Final Opti-Tool Input Files and Spreadsheet Models C) Draft Technical Memorandum on Phosphorus Load Reduction Analysis | A) July 13, 2018 B) July 13, 2018 C) July 20, 2018 | A) 1 each in electronic format B) 1 each in electronic format C) 1 each in electronic format |
| 5 | A) Draft Technical Opti-Tool Memorandum on Phosphorus Load Reduction Analysis B) Final Technical Memorandum C) Opti-Tool Input Files, and Accompanying Spreadsheets | A) August 20, 2018 B) Within 15 days of receiving comments form WACOR C) September 15, 2018 | A) 1 each in electronic format B) 1 each in electronic format C) 1 each in electronic format |
| 6 | A) Review Summaries by Independent Technical Reviewers B) Present Findings at TSC Meeting | A) September 15, 2018 B) To be determined but no later than October 30, 2018 | A) 1 each in electronic format B) In-person |
| 7 | Public Outreach Meeting | To be determined but no later than October 30, 2018 | In-person |
| 8 | A) Draft Final Report B) Final Report | A) September 15, 2018 B) Within 15 days of receiving comments from | A) 1 each in electronic format B) 1 each in electronic format |

| | | | |
|----------|--|---|--|
| | | WACOR but no later than November 30, 2018 | |
| 9 | A) Participate in Development of Scope of Work B) Assist in Selection of Pilot MS4s C) Participate and Provide Support in 6 Working Meetings D ₁) 4 Draft Technical Support Documents D ₂) 4 Final Technical Support Documents E ₁) Table of Contents E ₂) Draft Phase 3 Report E ₃) Final Phase 3 Report | A) October 15, 2018 B) October 15, 2018 C) November 2018 to May 2019 D ₁) To be Determined during Phase 3 meetings (November 2018 – May 2019) D ₂) Within 15 days of receiving comments from WACOR but no later than June 30, 2019 E ₁) April 1, 2019 E ₂) June 1, 2019 E ₃) June 30, 2019 | A) In-person and written comments in electronic format B) 1 each in electronic format C) In-person at meetings and 1 each in electronic format D ₁) 1 each in electronic format D ₂) 1 each in electronic format E ₁) 1 each in electronic format E ₂) 1 each in electronic format E ₃) 1 each in electronic format |

ANTICIPATED TRAVEL REQUIREMENTS

Air Travel for 1 person to Boston, Massachusetts to attend up to 4 working meetings. Technical directions will be issued by the EPA WACOR within 2 weeks of the scheduled trip to clarify the specific travel dates and the number of persons required for the following tasks:

| Task | Travel Destination /Purpose | Travel Destination /Purpose |
|-------------|------------------------------------|--|
| 9C | Project Team Working Meetings | Boston MA Area – Participate in meeting and give presentations as needed |

ADDITIONAL REQUIREMENTS:

Office direct costs (ODCs) for copying, postage/courier, supplies, computer usage, and graphics are allowed.

Upon issuance of written technical direction, the Contractor shall submit for inspection of all work in progress at any time under this work assignment. The Contractor shall develop and maintain files supporting each task.

The Contractor shall contact the EPA WACOR and/or the Contract Level Contracting Officer's Representative (CL-COR) by telephone to discuss any problems that may adversely affect the work on this Work Assignment. Within five (5) calendar days the Contractor shall follow the phone call with a brief written explanation of the problem, including any actions already taken, and/or recommended solutions to correct the problem. Written explanation shall be made available to the EPA WACOR and the CL-COR.

CONTRACTOR IDENTIFICATION

To avoid any perception that Contractor personnel are EPA employees, the Contractor shall assure that Contractor personnel are clearly identified as independent Contractors of EPA when attending meetings with outside parties or visiting field sites.

CONTROL REQUIREMENTS

Organizational Conflict of Interest

The Contractor shall warrant that, to the best of the Contractor's knowledge and belief, there are no relevant facts or circumstances which could give rise to an organizational conflict of interest, as defined in FAR Subpart 9.5, or that the Contractor has disclosed all such relevant information. See contract clause 1552.209-71 Organization of Conflict of Interest.

Notification of Conflicts of Interest Regarding Personnel

The Contractor shall immediately notify the CL-COR and the Contracting Officer of (1) any actual or potential personal conflict of interest with regard to any of its employees working on or having access to information regarding this contract, or (2) any such conflicts concerning subContractor employees or consultants working on or having access to information regarding the contract, when such conflicts have been reported to the Contractor. A personal conflict of interest is defined as a relationship of an employee, subContractor employee, or consultant with an entity that may impair the objectivity of the employee, subContractor employee, or consultant in performing the contract work. See Section H.4, contract clause EPAAR 1552.209-73 Notification of Conflict of Interest.

Project Employee Confidentiality Agreement

The Contractor agrees that the Contractor employee will not disclose, either in whole or in part, to any entity external to the EPA or the Contractor, any information or data (as defined in FAR Section 27.401) provided by the government or first generated by the Contractor under this contract or any site-specific cost information without first obtaining the written permission of the EPA CL-COR.

Notification for Any Single Event Likely to Exceed \$20,000

No single event under this Work Assignment is anticipated to exceed \$20,000. The Contractor shall immediately notify the EPA Contracting Officer, CL-COR and WACOR of any anticipated event involving support for a meeting, conference, workshop, symposium, retreat, seminar or training that may potentially incur \$20,000 or more in cost during performance. Conference expenses are all direct and indirect costs paid by the government and include any associated authorized travel and per diem expenses, room charges for official business, audiovisual use, light refreshments, registration fees, ground transportation and other expenses as defined by the Federal Travel Regulations. All outlays for conference preparation should be included, but the federal employee time for conference preparation should not be included. After notifying EPA of the potential to reach this threshold, the Contractor shall not proceed with the task(s) until authorized to do so by the Contracting Officer.

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|---|---|---|-------------------------------|----------------------------|----------------------------|-------------------------|----------------------------|---------|-------------------------|------------------|
| EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment | | Work Assignment Number 2-47 | | | | | | | | |
| | | <input type="checkbox"/> Other <input type="checkbox"/> Amendment Number: | | | | | | | | |
| Contract Number EP-C-16-003 | Contract Period 07/01/2016 To 06/30/2021 Base Option Period Number 2 | Title of Work Assignment/SF Site Name Waste & Decentralized Systems | | | | | | | | |
| Contractor EASTERN RESEARCH GROUP, INC. | | Specify Section and paragraph of Contract SOW See PWS | | | | | | | | |
| Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval | | Period of Performance From 07/01/2018 To 06/30/2019 | | | | | | | | |
| Comments: | | | | | | | | | | |
| <input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund | | | | | | | | | | |
| SFO <input type="checkbox"/> Note: To report additional accounting and appropriations data use EPA Form 1900-69A. | | | | | | | | | | |
| Line | DCN (Max 6) | Budget/FY (Max 4) | Appropriation Code (Max 6) | Budget Org/Code (Max 7) | Program Element (Max 9) | Object Class (Max 4) | Amount (Dollars) | (Cents) | Site/Project (Max 8) | Cost Org/Code |
| 1 | | | | | | | | | | |
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| Authorized Work Assignment Ceiling | | | | | | | | | | |
| Contract Period: | | Cost/Fee: | | LOE: | | | | | | |
| 07/01/2016 To 06/30/2021 | | | | | | | | | | |
| This Action: | | | | | | | | | | |
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| Total: | | | | | | | | | | |
| Work Plan / Cost Estimate Approvals | | | | | | | | | | |
| Contractor WP Dated: | | | | Cost/Fee | | | | LOE: | | |
| | | | | | | | | | | |
| Cumulative Approved: | | | | Cost/Fee | | | | LOE: | | |
| | | | | | | | | | | |
| Work Assignment Manager Name Gajindar Singh | | | | | | | Branch/Mail Code: | | | |
| _____ (Signature) | | | | | | | _____ (Date) | | | |
| | | | | | | | Phone Number: 202-564-0634 | | | |
| | | | | | | | FAX Number: | | | |
| Project Officer Name Robin Danesi | | | | | | | Branch/Mail Code: | | | |
| _____ (Signature) | | | | | | | _____ (Date) | | | |
| | | | | | | | Phone Number: 202-564-1846 | | | |
| | | | | | | | FAX Number: | | | |
| Other Agency Official Name | | | | | | | Branch/Mail Code: | | | |
| _____ (Signature) | | | | | | | _____ (Date) | | | |
| | | | | | | | Phone Number: | | | |
| | | | | | | | FAX Number: | | | |
| Contracting Official Name Brad Heath | | | | | | | Branch/Mail Code: | | | |
| _____ (Signature) | | | | | | | 7/1/2018 (Date) | | | |
| | | | | | | | Phone Number: 513-487-2352 | | | |
| | | | | | | | FAX Number: | | | |

**PERFORMANCE WORK STATEMENT
CONTRACT EP-C-16-003
WORK ASSIGNMENT 2-47**

TITLE: Providing Assistance to Wastewater and Decentralized Systems

WORK ASSIGNMENT CONTRACTING OFFICER'S REPRESENTATIVE (WACOR)

Gajindar Singh
U.S. EPA (Mail Code 4204M)
Phone: 202-564-0634
Email: singh.gajindar@epa.gov

**ALTERNATE WORK ASSIGNMENT CONTRACTING OFFICER'S
REPRESENTATIVE (AWACOR)**

Smiti Nepal
U.S. EPA (Mail Code 4204M)
Phone: 202-564-2457
Email: smiti.nepal@epa.gov

PERIOD OF PERFORMANCE: July 1, 2018 to June 30, 2019

ESTIMATED LEVEL OF EFFORT: 1026 hours

BACKGROUND: Growing public awareness and concern for controlling water pollution led to enactment of the Federal Water Pollution Control Act Amendments of 1972. As amended in 1977, this law became commonly known as the Clean Water Act (CWA). The Act established the basic structure for regulating discharges of pollutants into the waters of the United States. It gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry. It also funded the construction of sewage treatment plants under the construction grants program and recognized the need for planning to address the critical problems posed by nonpoint source pollution.

Subsequent enactments modified some of the earlier Clean Water Act provisions. Revisions in 1981 streamlined the municipal construction grants process, improving the capabilities of treatment plants built under the program. Changes in 1987 phased out the construction grants program, replacing it with the State Water Pollution Control Revolving Fund, more commonly known as the Clean Water State Revolving Fund (CWSRF). The 1987 amendments also established Title II grants for territories and the Clean Water Tribal Set Aside (CWISA) program.

Many small and rural communities, including those in Indian Country and along the U.S.-Mexico border, struggle with aging or inadequate wastewater treatment systems, or do not have access to basic wastewater services. Small communities have 10,000 or fewer people and an

average daily wastewater flow of less than 1 million gallons. Due to limited capacity, these communities are vulnerable to both natural disasters and man-made incidents. The Sustainable Communities Infrastructure Branch (SCIB) in EPA's Office of Wastewater Management focuses on supporting these communities by providing funding needed for infrastructure improvements; technical support to ensure proper operations and maintenance, resiliency, and asset management for centralized wastewater treatment systems; and provide resources about the proper design and maintenance for onsite wastewater treatment systems.

Lagoon-based wastewater treatment systems have been widely used in the United States and around the world for both municipal and industrial applications. These systems are attractive particularly to small communities due to their low operating cost, built in solids storage, and low minimal operating requirements. Where land availability and proper topography are favorable, lagoon-based systems are the preferred process for removal of biochemical oxygen demand (BOD) and total suspended solids (TSS) of the wastewater, usually to the 30-50 mg/L range. Conventional lagoon systems generally contain multiple cells or multiple earthen basins, typically with relatively long hydraulic retention times (HRTs). They are usually once through systems with no recycle of biological solids. Some of the limitations cited for conventional lagoon systems are large land area requirements, limited nutrient (Nitrogen and Phosphorus) removal, reduced cold weather performance, limited ability to control algae and suspended solids especially in warm weather, and limited BOD and suspended solids reduction to levels below 30-50 mg/L.

Several advanced lagoon treatment technologies, retrofit options, and add-on systems have been developed allowing lagoon systems to achieve performance comparable or exceeding activated sludge processes. This includes advanced treatment levels for BOD and TSS, Ammonia control to very low concentrations even at very cold temperatures, nutrient (N and P) removal to low levels, year-round performance in warm or cold climates, and low operation and maintenance requirements.

SCIB does this through leading or supporting the following programs:

1(a) The Clean Water Indian Set-aside Program

The CWISA program aims to increase access to safe drinking water and basic sanitation in Indian Country. CWISA funds are used for the planning, design, and construction of wastewater treatment systems in American Indian and Alaskan Native (AI/AN) communities. In addition, EPA is a cornerstone in the multi-agency tribal Infrastructure Task Force (ITF) that was created in 2007 to develop and coordinate federal activities in delivering water infrastructure, wastewater infrastructure and solid waste management services to tribal communities. The federal partners are Department of Agriculture, Environmental Protection Agency, Department of Health and Human Services, Department of Housing and Urban Development, and Department of the Interior. More information about the ITF is available at <http://www.epa.gov/tribal/federal-infrastructure-task-force-improve-access-safe-drinking-water-and-basic-sanitation>.

1(b) Small Water System Technical Training Workshops

In 2011, SCIB began conducting Small Water System Technical Training Workshops. Since then, it has delivered 19 trainings to approximately 604 participants from tribes and small rural communities. The workshops focus on how best to operate, troubleshoot and maintain small wastewater and drinking water systems to ensure sustainability and resiliency by proper operation and maintenance. More information about these workshops/ or small systems is available at: <https://www.epa.gov/small-and-rural-wastewater-systems/tools-training-and-technical-assistance-small-and-rural#training>

2 The Wastewater Technology and Innovation Program

The Wastewater Technology and Innovation Program monitors emerging technical issues, encourages adoption of new technologies, and supports the appropriate use of existing technologies that provide communities cost-effective technical solutions needed to protect public health and the environment. Furthermore, the Program collaborates with stakeholders in emerging technologies and provides expert advice and high-quality, timely information and tools to OWM leadership and programs, EPA regions, utilities, and funding organizations. The Program also collaborate with Sustainable Utilities Management program to emphasize importance of technology adoption as a key element to sustainable utility.

3 Communications and Outreach Support

SCIB serves as EPA's lead program on reaching a variety of underserved communities as well as those developing innovative technologies throughout the wastewater sector. In SCIB's efforts to best serve these stakeholders, SCIB continues to release documents, publications, and infographics. From annual report fact sheets to larger compendiums, SCIB strives to improve its messaging and how that message is delivered.

4 Providing Technical Information on Lagoon Technology

The task 4 of this work assignment will be used in subsequent work to develop technical information to lagoon owners and regulators of small wastewater treatment systems on options to reduce ammonia and nutrient concentrations in the effluent from the lagoons.

PURPOSE: The purpose of this work assignment is to provide the contractor information and direction for the preparation of a specific work plan related to the above four programs.

Objective 1. a The objective of this work assignment Task 1 is to support the CWISA Program to increase access to safe drinking water and basic sanitation in Indian Country and to ensure that public funds are used in the most efficient and consistent manner. This includes providing support to increase information sharing and improve collaboration between the federal and tribal members of the tribal Infrastructure Task Force (ITF): EPA, USDA, IHS, HUD, DOI and Tribes. EPA is a cornerstone in the ITF and its primary facilitator. More details are available at: <http://www.epa.gov/tribal/federal-infrastructure-task-force-improve-access-safe-drinking-water-and-basic-sanitation>).

Objective 1. b The other objective of this work assignment Task 1 for the contractor to deliver the Small Water and Wastewater System Technical Training Workshops **in an online webinar**

format for tribes and small rural communities that focus on how best to operate, troubleshoot and maintain small wastewater and drinking water systems, and decentralized systems.

Objective 2. A second objective for this work to provide technical support for the program activities associated with OWM's Technology Wastewater Program. The program goals include: keeping abreast on emerging technical issues, encourages adoption of new technologies, collaborates with stakeholders in emerging technologies and provides expert advice and high-quality, timely information and tools to OWM leadership and programs, EPA regions, utilities, and funding organization, and supports the appropriate use of existing technologies that provide communities cost-effective technical solutions needed to protect public health and the environment.

Objective 3. A third objective for of this work assignment is to support communications and outreach activities of programs managed by SCIB. SCIB's programs support small and rural communities to gain or improve their access to adequate sanitation and it is crucial that our products are designed in such a way as to be helpful to our target audiences. These audiences include communities along the US-Mexico Border, tribes, US territories and the District of Columbia, technical experts, and small wastewater communities.

Objective 4. A fourth objective for this work assignment is to conduct a review of the literature on the ammonia control and nutrient removal performance and costs of conventional municipal lagoon systems and lagoon upgrades, retrofits, and add-on processes. EPA will provide the contractor information and direction for the preparation of a specific work plan. The contractor will document the findings in a technical report. The project will include various types of municipal lagoons but the main emphasis of this project will be on municipal lagoon retrofits, upgrades, and add-on processes within the facility boundary to enhance ammonia control and nutrient removal and achieve lower and more consistent ammonia and nutrient effluent concentrations in warm and cold climates.

Quality Assurance

The tasks in this work assignment will not require generating new environmental data or geographic information. The work in this work assignment do not require environmental data measurements. Consistent with the Agency's quality assurance (QA) requirements, the contractor does not need to supplement the Contract Level Quality Assurance Project Plan (QAPP) or to prepare a Project Specific Quality Assurance Project Plan (PQAPP).

The contractor shall provide Monthly Financial Reports which among its tasks shall include a table with the invoice Level of Effort (LOE), and cost amount broken out by the tasks in this work assignment along with the progress on each task in detail.

Scope of Work

Task 0: Work Plan, Budget Development, and Monthly Progress Reports

The contractor shall develop a detailed work plan, which is the result of interpreting the statement of work and discussions with EPA on further direction on the work assignment that describes how each task will be carried out. The contractor shall also prepare a budget for the

accomplishment of the indicated tasks in accordance with the clause Work Assignments (EPAAR 1552.211-74). The work plan shall include a schedule, staffing plan, level of effort (LOE), and cost estimate for each task, the contractor's key assumptions on which staffing plan and budget are based, and qualifications of proposed staff. If a subcontractor(s) is proposed and subcontractors are outside the local metropolitan area, the contractor shall include information on plans to manage work and contract costs. This task also includes bi-weekly telephone conferences between the work assignment COR and the project manager, each approximating one hour in duration, to coordinate and confirm task performance. The contractor shall also submit monthly progress and financial reports. Monthly financial reports must include a table with the invoice LOE and cost amount broken out by the tasks in this WA. The work assignment COR may require the contractor two trips to Washington, DC, to discuss the progress and direction of this work assignment.

Deliverables: Work plan, budget, and monthly progress and financial reports.

Task 1 a. Support the Infrastructure Task Force (ITF)

The contractor shall provide support to EPA, based on Objective 1 above, to increase information sharing and improve collaboration between ITF members (EPA, USDA, IHS, HUD, and Tribes).

This activity shall include the following:

A. The contractor shall provide support for up to 6 conference calls held by the Water Infrastructure Division, Sustainable Communities Infrastructure Branch. The contractor shall provide one technical expert, with a general knowledge of drinking water and wastewater issues and familiarity with EPA acronyms to participate on each call. Each call will last between one and two hours. The work assignment COR will provide a schedule of calls to the contractor.

B. It is anticipated that out of the 6 calls referenced in task above, up to 3 will be full member ITF calls. For these 3 calls, the contractor shall develop a meeting summary report and provide the draft meeting notes to the work assignment COR for review and comment. The summary at a minimum shall include a listing of all meeting attendees and meeting information including: 1) presentation information, 2) questions, 3) comments, 4) discussions and 5) action items. The length of the summary should be commensurate with the level of discussion at the meeting. The summary should be organized by session topic and include the ideas and suggestions of meeting groups, and then combined for the meeting as a whole. If possible, the summary should link common themes discussed during the meeting. The summary should not merely be lists copied from group flip charts, but rather should include analysis and combine similar ideas.

The contractor shall provide the draft summary and notes to the work assignment COR for review and comment. The contractor shall provide minutes for each teleconference in Microsoft Word format via email.

C. The contractor shall provide support for the ITF program as needed and defined by the ITF Principals (composed of management staff from EPA, USDA, IHS, HUD & DOI). Proposed activities include: annual report development (2-3) pages, development of up to

3 financial management modules, development of a technical white paper on remote monitoring and possible operation and control of water/wastewater utilities (up to about 10 pages) and meeting facilitation (two contractor personnel, likely in March 2019, at Denver, CO). These activities were discussed and recommended at recent ITF meetings. This scope of work includes time for review and comment; incorporation of changes; and time to edit, format, and prepare each document for publication online (508 compliant).

In the past Horsley Witten has provided support to the Infrastructure Task Force (ITF) program.

Task 1 b: Deliver Technical Training Workshops to Small Water and Wastewater Systems

The contractor shall provide Small Water System Technical Training workshops **via an online webinar** (at least six 90-minute sessions) in the 12 months. The goal is to provide training to as many of the employees of tribes and small rural communities as possible. The objective of the webinars will focus on how best to operate, troubleshoot and maintain small wastewater and drinking water systems. The workshops will also include a module for utility managers on effective utility management. One of the most significant challenges with small, rural wastewater systems is the inability or lack of knowledge by their operators to maintain the systems and the inability to retain the trained staff. The contractor support staff identified for these activities must have knowledge of the subject matter, experience developing training tools and techniques, professional tribal work experiences, and knowledge of different learning styles and tribal culture. The workshop will use presentations, case studies, and group exercises to promote utility sustainability and instruct participants on how best to operate, troubleshoot, maintain and manage drinking water & wastewater collection treatment and disposal systems.

This activity shall include the following:

A: The contractor shall work with EPA to identify the potential dates. The contractor shall conduct outreach to tribes and small, rural communities. The outreach will include developing and distributing flyers, advertising on the website, and emailing to potentially interested parties. The attendees of the webinars will be operators, managers, and local officials of small water and wastewater systems.

B: The contractor shall work with EPA to refine the existing workshop curriculum and materials previously developed. The contractor shall prepare and distribute electronically the training materials, the pre-test, post-test, and other materials to augment the training. The contractor shall facilitate and teach the workshop webinars. The contractor shall also provide online support, such as: virtual room monitoring, answering questions, recording attendance, attendee registration, confirmation letters, etc. The contractor shall work with the Indian Health Service, state, regional and non-profit organizations to ensure participation. This online webinar capacity should be for at least 100 participants.

C. The contractor shall deliver assessments and outcomes of training along with project wrap-up report including feedback from the attendees.

In the past, Horsley Witten Group has provided 19 operation and maintenance training workshops in different parts of the country.

Task 2: Wastewater Nutrient Removal Technology Training Modules

The contractor shall develop training modules of nutrient removal technologies at municipal wastewater treatment plants under the SCIB Branch Technology Group's guidance. The training modules will be for EPA staff to provide training to internal and external audiences and may be shared with other partners, co-regulators, and stakeholders

Specifically, the contractor shall produce three training modules for nutrient removal technologies at municipal wastewater treatment plants, from basic, intermediary and advanced level. It is expected that the training modules would take between one and two hours to present. Target audiences include non-expert decision-makers and Regional and State regulators.

Each training module will include a set of visuals (e.g. a Power Point presentation) with detailed speaker notes and technical references. It is expected that each training module will substantively be organized in the same way – using a common framework - with each level providing more extensive information, or if appropriate more technical details. In other words, the training can be viewed as “one training” offered at three different levels. The contractor shall provide recommendations to EPA on considerations and options for the framework and the final training deliverable will include a brief summary or “cheat sheet” that is approximately 1-2 pages long for future reference of the trainees.

One goal of the trainings is to provide the common and understandable framework to learn about, understand, and discuss nutrient removal technologies. The framework enables non-technical and/or non-expert audiences to better understand, categorize, retain, and assess information on nutrient reduction technologies. A second goal is to provide up-to-date and reliable information on nutrient technology for executives and for regulators. A third goal is to inform audiences of reliable sources of information to support their decision-making. Training goals and audiences may be further refined under this Task.

The contractor must have experience and expertise on highly technical nutrient reduction technology information and also the ability to convey messages and information to non-technical and/or non-expert groups. The contractor must be experienced in adult learning principles to provide training modules that will translate highly technical information to an audience that will have more of a managerial role. EPA will provide most of the technical materials on which the training will be based.

The EPA WACOR shall provide the contractor with written technical direction to initiate support for the module. The contractor shall support the development of three products identified via written technical direction from the WACOR which may include, but are not limited to, summary of technologies, presentations, minutes etc. by drafting material and obtaining comments on draft documents. All products, including drafts, shall undergo thorough review for punctuation, grammar, spelling, completeness, etc. by the contractor prior to EPA review. These specific activities shall include the following:

2A. The contractor shall meet with the WACOR and other OWM project personnel to discuss goals to accomplish the task. EPA will provide material at this **kick-off meeting** on the training modules for nutrient reduction wastewater treatment technologies. The contractor will hold a conference call with the WACOR and key personnel identified by the WACOR who shall

participate in the project within ten (10) business days after the work plan is issued. The contractor will incorporate meeting discussions into a meeting summary which shall include milestones, target dates, and deliverables within ten (10) business days after the meeting. A final meeting summary twenty (20) days after work plan approval.

The contractor shall attend and conduct bi-weekly conference calls with OW project personnel and/or the WACOR; intervals for conference calls may change as discussed and directed by the WACOR. These conference calls will include discussions of the schedule, training goals and audience as well as the technical materials, framework, training outlines and training drafts.

2B. Technical Information and Framework/Outline: EPA will provide technical materials for the contractor's use. The contractor should have familiarity with these resources and expertise in the field. The contractor shall review information and provide recommendations on additional resources to include. Following the review of the materials and the recommendations for additional technical resources, the contractor and EPA shall meet to discuss the materials and options for training organizations and information framework. Following this discussion and any subsequent technical direction from EPA on goals, audience, framework, the Contractor shall propose an option(s) for a framework for organizing and understanding the information as well as a general outline for the three training modules. Please see the attachments.

Deliverables: The contractor shall share and discuss the materials compiled for the three modules as well as clearly represent how adult learning principles will be applied and how the information can be successfully framed and presented

2C. The contractor shall first provide a detailed outline of the first training module that will include basic nutrient cycles at wastewater treatment plant and the conventional methods that are used to remove nutrients. The contractor shall provide graphics and depictions that is clear and stepwise to depict the process. This module will be a template for the proceeding training modules and must show how the adult learning principles have been utilized to produce the first training module. The training module shall be one hour long and is intended to be presented by EPA staff to an audience that has general knowledge of nutrients but would walk away with an understanding of different types of treatment technologies (high level) that are available for nutrient removal at wastewater treatment plants.

Deliverables: The contractor shall develop one outline, one draft and one final draft. The contractor shall provide a minimum number of copies in print. It is expected that all final deliverable materials will be 508-compliant and meet the respective OPA guidelines, as appropriate

2D. The contractor shall provide the second training module that will include a brief description of nutrient cycles and different types of treatment technologies that are available for nutrient removal at wastewater treatment plants. The contractor shall then focus on the technologies within the specific nutrient removal scheme (nitrogen and phosphorus) and have a more in-depth process description. This module can also show some of the process modifications that can be implemented at a plant for nutrient removal. The last part of this module will briefly touch base on the more advanced and innovative approaches but will not go into detail description. The

contractor shall provide 1.5 to 2 hours long training module using adult learning principles with graphics and stepwise depictions where the audience will already have a basic knowledge of nutrient cycle and a general idea of removal processes and should walk away with a clear understanding of different types of technologies available and in use at wastewater treatment plants.

Deliverables: The contractor shall develop one outline, one draft and one final draft. The contractor shall provide a minimum number of copies in print. It is expected that all final deliverable materials will be 508-compliant and meet the respective OPA guidelines, as appropriate

2E. The contractor shall provide the third training module that will include a summary version of the second module but will focus on the more advanced and innovative treatment technologies for nutrient removal at wastewater treatment plants and will describe how the particular technology is different or an improvement. EPA will provide material on the latest technologies and the contractor should also research the new technologies for nutrient removal at wastewater treatment plants. The contractor shall provide 1-2 hours long training module. The target audience for this module will already have a good understanding of the available nutrient removal technologies and should walk away with understanding of the innovative and advanced technologies that are available. EPA will provide materials.

Deliverables: The contractor shall develop one outline, one draft and one final draft. The contractor shall provide a minimum number of copies in print. It is expected that all final deliverable materials will be 508-compliant and meet the respective OPA guidelines, as appropriate.

Task 3: Communications and Outreach Support

The contractor shall provide support for SCIB's communications and outreach efforts. This support shall include finalizing publication templates, formatting completed products for publications, meeting requirements for 508 accessibility including metadata, and designing graphics for use in publications as needed. SCIB anticipates needing 508 accessibility compliance and formatting support for the following products:

- 4 double-sided one-page fact sheets (total of 8 pages)

- 2 double-sided two-page fact sheet (total of 8 pages)

SCIB also anticipates needing 508 accessibility compliance, formatting support, and graphic design for the following products:

- 3 reports (total of 180 pages and 21 graphics)

The contractor shall also develop at least two easel posters for use at the Water Environment Federation's Technical & Exposition Conference 2018. SCIB will provide text and graphics and the contractor shall format and produce the poster.

All products shall meet all EPA guidelines contained in the EPA Style Guide and EPA Web Guide. The contractor shall provide all files of draft and finished products to the WACOR.

DELIVERABLES: 508 accessibility compliance for 9 documents (total of 196 pages); formatting support for 9 documents (total of 196 pages); graphic design for 3 reports (total of 21 graphics); at least two easel posters.

Task 4: Literature Review of Lagoon Technologies to Reduce Ammonia and Nutrients

The contractor shall conduct a review of the literature on the ammonia control and nutrient removal performance and costs of conventional municipal lagoon systems and lagoon upgrades, retrofits, and add-on processes and document the findings in a technical report. The main emphasis of this task will be on retrofits or add-on processes within the facility boundary to enhance ammonia control and nutrient removal in warm and cold climates. The contractor or his subcontractor must be experienced in municipal lagoons systems technology, and their ammonia control and nutrient removal performance, reliability, and costs.

The literature review will include peer-reviewed articles, books, dissertations and conference papers. Project information that may be published or readily available from actual facilities will also be included.

All reviewed literature sources will be properly referenced and a summary of the information in each source will be included in a report. Where electronic copies of reviewed literature are available, the report will include a link to these sources. The review report shall be organized with different sections for ammonia control, nitrogen removal, phosphorus removal, and if applicable systems that remove both nitrogen and phosphorus.

Where evident in the literature, the literature review summary will describe the specific mechanisms of removal provided by retrofits and add-on systems and other lagoon operating factors such as algal uptake, sludge deposition, adsorption by bottom soils, nitrification, denitrification, and ammonia volatilization.

The literature review will include capital as well as operations and maintenance (O&M) costs where referenced. Where capital costs are referenced and applicable literature information is included, the review should indicate if the costs are for the existing lagoon facility or upgrade, whether they include other non-related costs as part of a large project, and whether they pertain to non-nutrient removal or ammonia control aspects. Where specified in the literature, the review report will also indicate which components of O&M costs (e.g. labor, power/electrical usage, chemical usage, removal and disposal of sludge, others) are included in costs referenced.

Details of tasks and deliverables:

Task 4A. To conduct a review of the literature on the ammonia control and nutrient removal performance and costs of various types of conventional municipal wastewater lagoon systems. This includes aerated lagoons, facultative lagoons, and other lagoon systems. Costs shall include capital as well as operations and maintenance costs.

Task 4B. To conduct a comprehensive and thorough review of the literature on the ammonia control and nutrient removal performance and costs of retrofit options and add-on processes available to enhance municipal wastewater lagoon performance for ammonia control and/or nutrient removal to meet lower and more consistent ammonia and nutrient removal levels. Costs shall include capital as well as operations and maintenance costs.

Retrofits and add-on systems will include add-on nitrification filters, total nitrogen or total phosphorus filters and other removal systems, upgrades to increase and better control biomass such as fixed growth and attached growth system retrofits, retrofits for solids-liquid separation including those involving adding a solids recycle system, operating the pond as a sequencing batch reactor, addition of baffles and suspended fabrics for attached growth or performance enhancement, and installing commercial lagoon nitrification systems or components.

TASK 4C. To document and summarize findings in a technical report

Using the information developed in 4A and 4B above, develop a technical literature review report on the performance and costs of a) the ammonia control and nutrient removal performance and costs of conventional municipal lagoon systems within the facility and b) the performance and costs of lagoon upgrades, retrofits, and add-on processes for ammonia control or nutrient (Nitrogen and Phosphorus) removal within the facility. The report shall include separate sections on a) and b).

All reviewed literature sources will be properly referenced and a summary of the information in each source will be included in a report. Where electronic copies of reviewed literature are available, the report will include a link to these sources. The review report will be organized with different sections for nitrogen removal, phosphorus removal, and if applicable systems that remove both nitrogen and phosphorus.

Where evident in the literature, the literature review summaries in the technical report will describe the specific mechanisms of removal provided by retrofits and add-on systems and other lagoon operating factors such as algal uptake, sludge deposition, adsorption by bottom soils, nitrification, denitrification, and ammonia volatilization.

TASK 4D Depending upon future availability of additional funds, the contractor is to conduct a review of the literature on the ammonia control and nutrient removal performance and costs of upgrades, retrofits, or upgrade to conventional municipal lagoon systems to meet lower and more consistent ammonia and/or nutrient removal (Nitrogen and Phosphorus) levels that involve 1) post-lagoon natural systems, and 2) conversions to mechanical plants; and document the findings in a technical report.

More details on this potential task will be provided to the contractor if and when additional funds are available

Deliverables and Time Table

| Task | Quantity | Due Date (On or About – Period of Time) |
|--|-----------------|--|
| Task 0: Kick off meeting Communications and Reporting | 1 | Kick off meeting within 10 business days after award and submit minutes within 5 business days of the meeting. Timing and format of future calls and meetings will be discussed at this meeting. Monthly Reports and bi-weekly phone calls |

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| Task 1.a A & B: Support ITF Conference Calls | 6 | Duration 12 months or per contract requirement (or as determined the COR). Anticipate up to 3 full member ITF calls and 3 other supportive conference calls. Conference call minutes of meetings within 5 working days. |
| Task 1a. C: Support for the ITF program as needed and defined by the ITF Principals; proposed activities include: annual report development (2-3) pages, development of up to 3 financial management modules, development of a technical white paper on remote monitoring of water/wastewater utilities (up to about 10 pages) and meeting facilitation (likely in March 2019, Denver CO). | 1 | Investigate and develop materials for all tasks as directed. Technical direction to be provided during the course of the work assignment. |
| Task 1b. A Identify the dates, develop outreach materials and conduct outreach for online training workshop webinar series | 1 | Within two months of the award of the work assignment |
| Task 1b. B. Refine training materials based on above Task 1.b, A and conduct the training workshop webinars. | 1 | Within 12 months of the award of the work assignment |
| Task 1b. C. Deliver assessments and outcomes of training with feedback from attendees | 1 | Within 12 months of the award of the work assignment |
| Task 2A. Kick-off Conference Call Notes | 1 | Within 10 days of the award of the work assignment |
| Task 2B. Technical Information and Framework/Outline (work plan) | 1 | Within 15 days of the award of the kick-off meeting |
| Task 2B. Monthly Progress Report | 1 | Within 45 days of the award of the work assignment |
| Task 2C monthly calls | 1 | Within 60 days of the award of the work assignment |

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| Task 2C monthly meeting minutes | 1 | Within 15 days of the award of the monthly call |
| Task 2C First Draft training module | 2 | Within 120 days of the award of the work assignment |
| Task 2C Final training module | 2 | Within 150 days of the award of the work assignment |
| Task 2C Feedback from running module | 1 | Within 160 days of the award of the work assignment |
| Task 2D and 2E Initial call | 1 | Within 180 days of the award of the work assignment |
| Task 2D Draft Training module | 2 | Within 240 days of the award of the work assignment |
| Task 2D Final training module | 2 | Within 270 days of the award of the work assignment |
| Task 2D Feedback from running module | 1 | Within 280 days of the award of the work assignment |
| Task 2E Draft Training module | 2 | Within 300 days of the award of the work assignment |
| Task 2E Final training module | 2 | Within 330 days of the award of the work assignment |
| Task 2E Feedback from running module | 1 | Within 360 days of the award of the work assignment |
| Task 3 | | |
| US-Mexico Border Annual Report | 2 pages | July 2018 |
| CWISA 30 Year Anniversary Report | 10pages | July 2018 |
| Tribal Grants Annual Report | 2 pages | July 2018 |
| Decentralized Grants Compendium | 90 pages | August 2018 |
| US Territory/DC Annual Report | 4 pages | August 2018 |

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| Nutrients Case Study Report | 80 pages | February 2019 |
| US-Mexico Border Annual Report | 2 pages | May 2019 |
| Tribal Grants Annual Report | 2 pages | May 2019 |
| US Territory/DC Annual Report | 4 pages | May 2019 |
| Task 4: | | |
| Task 4 Kick-off Conference Call | 1 | Within 10 days of the award of the work assignment |
| Task 4. Final Kick-off Conference Call Notes | 1 | Within 5 days of the award of the kick-off call/meeting |
| Task 4. Work Plan | 1 | Within 20 days of the award of the work assignment |
| Task 4. Monthly calls | 8 | Every month |
| Task 4. A monthly call minutes and progress | 8 | Within 5 days of each monthly call |
| Task 4A. Report due | 1 | Within 2 months of the award of the work assignment |
| Task 4B. Report due | 1 | Within 4 months of the award of the work assignment |
| Task 4C – First Draft report due | 1 | Within 1 month of receipt of EPA comments on Tasks 4A and 4B reports |
| Task 4C – Second Draft revised report due | 1 | Within 1 month of receipt of EPA comments on First Task 4C draft report |
| Task 4C – Final Report | 1 | Within 2 weeks of receipt of EPA comments on 2nd Task 4C draft report |
| Task 4D | | More details on this potential task will be provided to the contractor if and when additional funds are available |

PERFORMANCE STANDARDS AND QUALITY MEASURES:

Tasks are to be evaluated in accordance with the Quality Assurance Surveillance Plan and Quality Management Plan identified in the EP-C-16-003 contract.

All task(s) identified in the performance work statement above are subject to review and approval by the EPA COR and Project Officer based on the general guidelines of the contract quality assurance surveillance plan regarding: Programmatic, cost control, timeliness/deliverables, and document development standards. Additional project specific quality assurance surveillance plan requirements are identified below.

TRAVEL: Travel is anticipated for this work assignment. Contractor personnel will be required at the ITF meeting facilitation support efforts and travel will be charged on a cost reimbursement basis, following appropriate approval of the work assignment COR. Any travel will be allowable only in accordance with the limitation of FAR 31.205-43 and FAR 31.205-46, and must be approved by the EPA COR to travel taking place. For this task order, assume the following trips:

- Four trips for contractor to the EPA HQ offices in Washington DC (Tasks 0 and 1)
- One three-day trip for two contractor staff to travel to (most likely) Denver, CO in (most likely) March 2019.

GREEN MEETINGS AND CONFERENCES: This Task Order requires contractor support for meeting and conference planning and logistics and therefore must include “green meeting and conference” support. The contractor is required to use the provision of EPAAR 1552.223-71, when soliciting price quotes for work assignment s that require meeting and conference services on behalf of EPA.

CONFERENCES AND WORKSHOPS: The tasks under this work assignment may require the acquisition of “off-site” facilities for conference(s) and meetings as defined in the IPN 12-05 and the events associated with this work assignment are covered by EPA Order 1900.3 and do require EPA Form 5170.

The contractor shall immediately alert the COR to any anticipated event under the work assignment which may result in incurring an estimated \$20,000 or more cost, funded by EPA, specific to that event, meeting, training, etc. Those costs would include travel of both prime and consultant personnel, planning and facilitation costs, AV and rental of venue costs, etc. The EPA COR will then prepare approval internal paperwork for the event and will advise the contractor when appropriate signatures have been obtained. At that point, effort can proceed for the event. If the event is being sponsored by another EPA organization, the organization providing the planning is responsible for the approval.

Any event which meets the definition of a “conference,” with total net expenditures greater than \$20,000, is required to submit EPA Electronic Form 5170 and Form 5170-A (with cost estimates/actuals). In the case the workflow system is down and CORs require emergency approval, they can submit EPA Form 5170 (PDF) (2pp, 93K) (with cost estimates) to conference@epa.gov.

SOFTWARE APPLICATION AND ACCESSIBILITY (SECTION 508 REHABILITATION ACT AND AMENDMENTS):

Software Application files, if delivered to the Government, shall conform to the requirements relating to accessibility as detailed to the 1998 amendments to the Rehabilitation Act, particularly, but not limited to, § 1194.21 Software applications and operating systems and § 1194.22 Web-based intranet and internet information and applications. See:

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| Preferred text format: | MS Word, 2007.0 or higher (Office 2007 or higher) |
| Preferred presentation format: | Power Point, Office 2007 or higher |
| Preferred graphics format: | Each graphic is an individual GIF file |
| Preferred portable format: | Adobe Acrobat, version 9.0 or higher |

List of websites for attachments relevant to Task 2

- Municipal Nutrient Removal Reference Document Volume 1 (by EPA) 2008
(<https://nepis.epa.gov/Exe/ZyNET.exe/P100GE8B.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2006+Thru+2010&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C06thru10%5CTxt%5C00000033%5CP100GE8B.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL>)
- WERF document Nutrient Management Volume II 2013
(<https://www.werf.org/a/ka/Search/ResearchProfile.aspx?ReportId=NUTR1R06k>)
- Nutrient Control Design Manual (ORD and OW collaboration) 2011
(<https://nepis.epa.gov/Exe/ZyNET.exe/P1008KTD.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2006+Thru+2010&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C06thru10%5CTxt%5C00000021%5CP1008KTD.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL>)

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